

TECHNICAL INFORMATION

PYROBAR

T.M. REG. U. S. PAT. OFF.

GYPSUM PARTITION TILE



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

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PYROBAR* PARTITION TILE

DESCRIPTION

PYROBAR is a precast gypsum partition tile. It is made in various thicknesses, both solid and hollow, with indented surfaces to receive plaster.

Sizes—see technical data below.

Complies with ASTM Designation C52-41 and Federal Specification SS-T-316.

FUNCTION & UTILITY

FIREPROOF—gypsum is incombustible and will not communicate high temperatures until completely calcined, a very slow process. Fire resistance ratings shown in technical data below.

LIGHT WEIGHT—saves structural steel—generally 30% to 50% lighter than other masonry partitions of like thickness. Unit weights shown in technical data below.

PLASTER BOND—Authoritative tests show that gypsum plaster bonds to PYROBAR Partition Tile with factor of safety of 173.

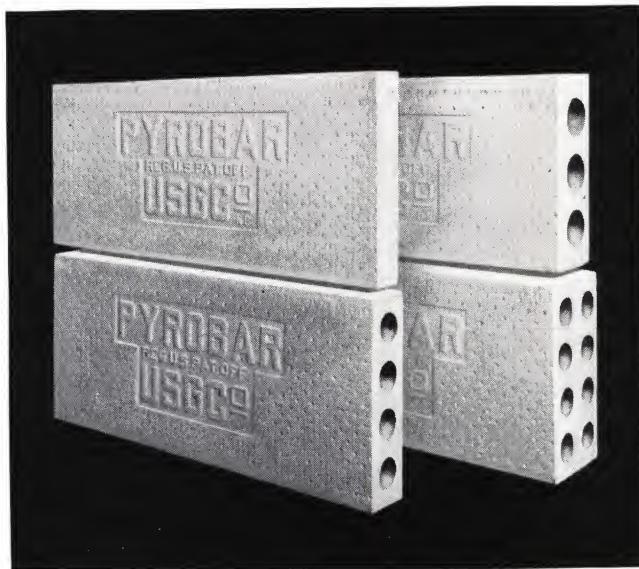
SAVES PLASTER—the large size, machine moulded units lay accurately to a straight line. Grounds are $\frac{1}{2}$ " instead of $\frac{5}{8}$ " or $\frac{3}{4}$ " for other masonry partitions.

RESISTANT TO SOUND TRANSMISSION—see technical data below.

LOW IN COST BECAUSE:

- (a) Material cost is low.
- (b) The large units (2½ sq. ft. surface area) lay into wall fast, thus reducing labor costs.
- (c) Lightness in weight reduces labor costs.
- (d) Fewer joints, saves mortar up to 40%.
- (e) Ease of cutting reduces waste, and lowers cost of alterations or remodeling.
- (f) Requires 20% less plaster than masonry units requiring $\frac{5}{8}$ " grounds.

"PYROBAR" and "RED TOP" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "PYROBAR" identifies the particular gypsum tile, "RED TOP" identifies the particular gypsum cement plaster, manufactured only by United States Gypsum.



LIMITATIONS OF USE

1. PYROBAR, although having a considerably higher compression strength than 75 lbs. per sq. inch gross area as required by ASTM Designation C52-41, is designed for non load-bearing partitions and should not be used for load bearing construction.
2. Portland cement and lime mortars do not bond adequately with PYROBAR and should not be used for erecting PYROBAR. Use RED TOP* Gypsum Cement Plaster for plastering and RED TOP Partition Tile Cement for mortar. See specifications, page 4.
3. For the reason given above, portland cement or lime plasters should not be used over PYROBAR. Before applying portland cement bedding for ceramic tile, metal lath shall be nailed to PYROBAR. Alternately, other types of masonry, such as structural clay tile may be used as backing for ceramic tile.
4. PYROBAR should not be used as a base, or starter course, where excessive water or moisture is expected. Use clay tile or cement block as a starter course.

TECHNICAL DATA FOR GYPSUM PYROBAR PARTITION TILE

SIZE OF PYROBAR PARTITION TILE	Limiting Partition Height	Weight per Sq. Ft.		Partition Tile Cement Required Per M Sq. Ft. Tile	Avg. Sound Transmission Loss in Decibels Plaster 2 Sides	Underwriters Laboratory Fire Ratings		
		Partition Weight No Plaster	Partition Weight (1) Plastered			1 hr. (no plaster)	2 hrs. (Plas. 2 sides)	3 hrs. (Plas. 2 sides)
2" x 12" x 30" Solid	10 ft.	11.5 lbs.	20.5 lbs.	400 lbs.	38.1 Db. (2)	1 hr. (no plaster)	2 hrs. (Plas. 2 sides)	3 hrs. (Plas. 2 sides)
3" x 12" x 30" Hollow	13 ft.	12.0 lbs.	21.0 lbs.	560 lbs.				
4" x 12" x 30" Hollow	17 ft.	15.5 lbs.	24.5 lbs.	760 lbs.				
6" x 12" x 30" Hollow	30 ft.	22.0 lbs.	31.0 lbs.	1120 lbs.				

(1) Plastered partition weights include plaster on both sides of solid and hollow tile.

(2) When furred, one side only, with USG* No. 500 Resilient Clips supporting metal lath and plaster (other side plastered direct), average transmission loss is 52.7 decibels. See BMS Report 17, National Bureau of Standards.

(3) Calculated. † National Bureau of Standards ‡ Underwriter's Laboratories § Nationally Recognized Fire Testing Laboratory—Name on request

Fire Test Rating and Ref.

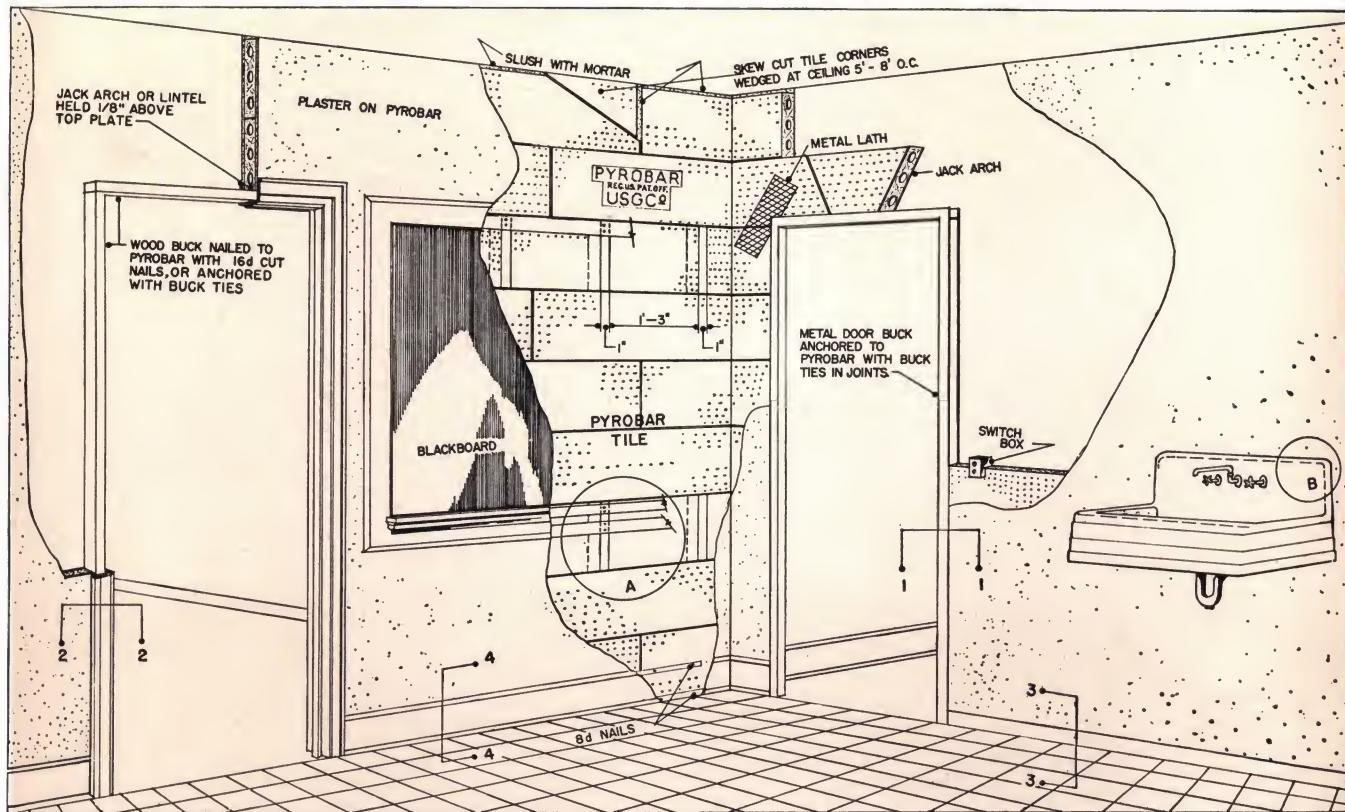
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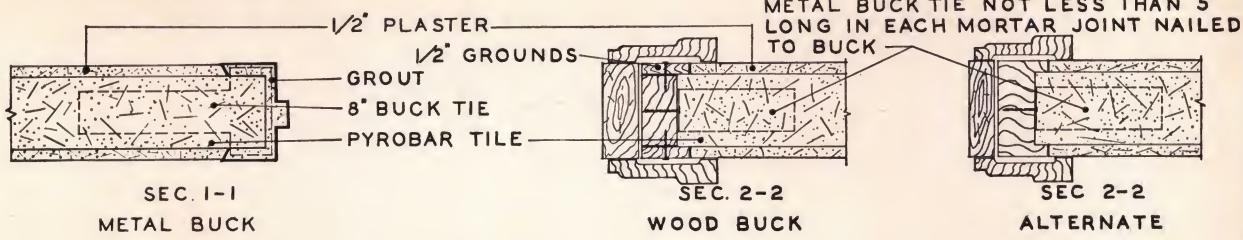
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(3)

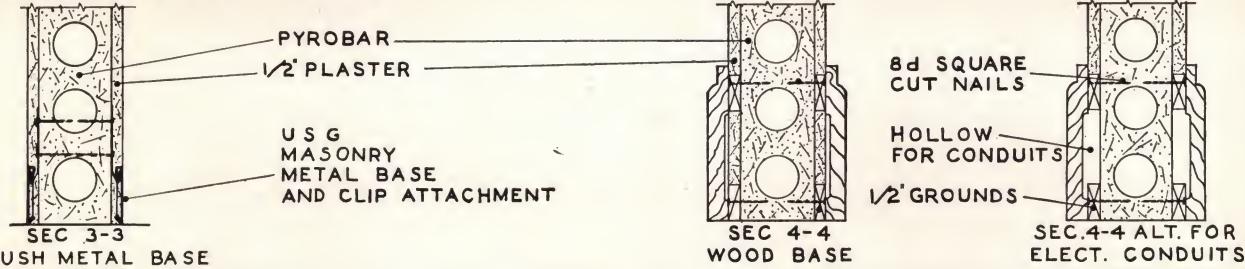
PYROBAR PARTITION TILE



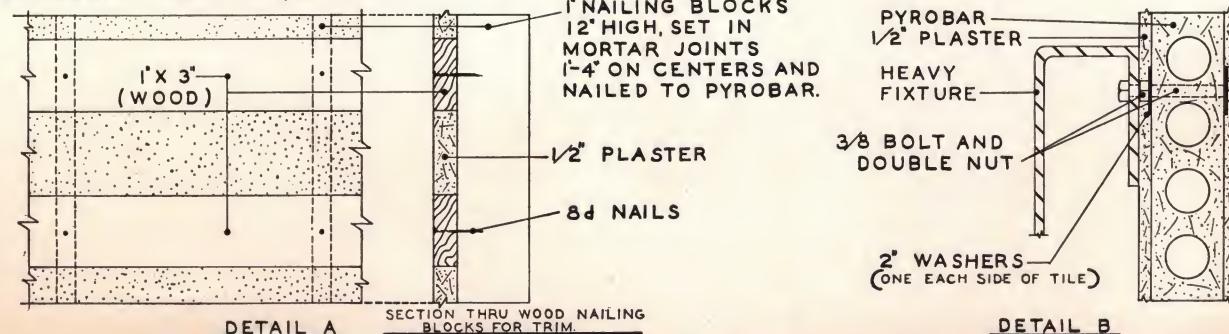
DOOR BUCKS: SCALE: 1-1/2" - 1'-0"



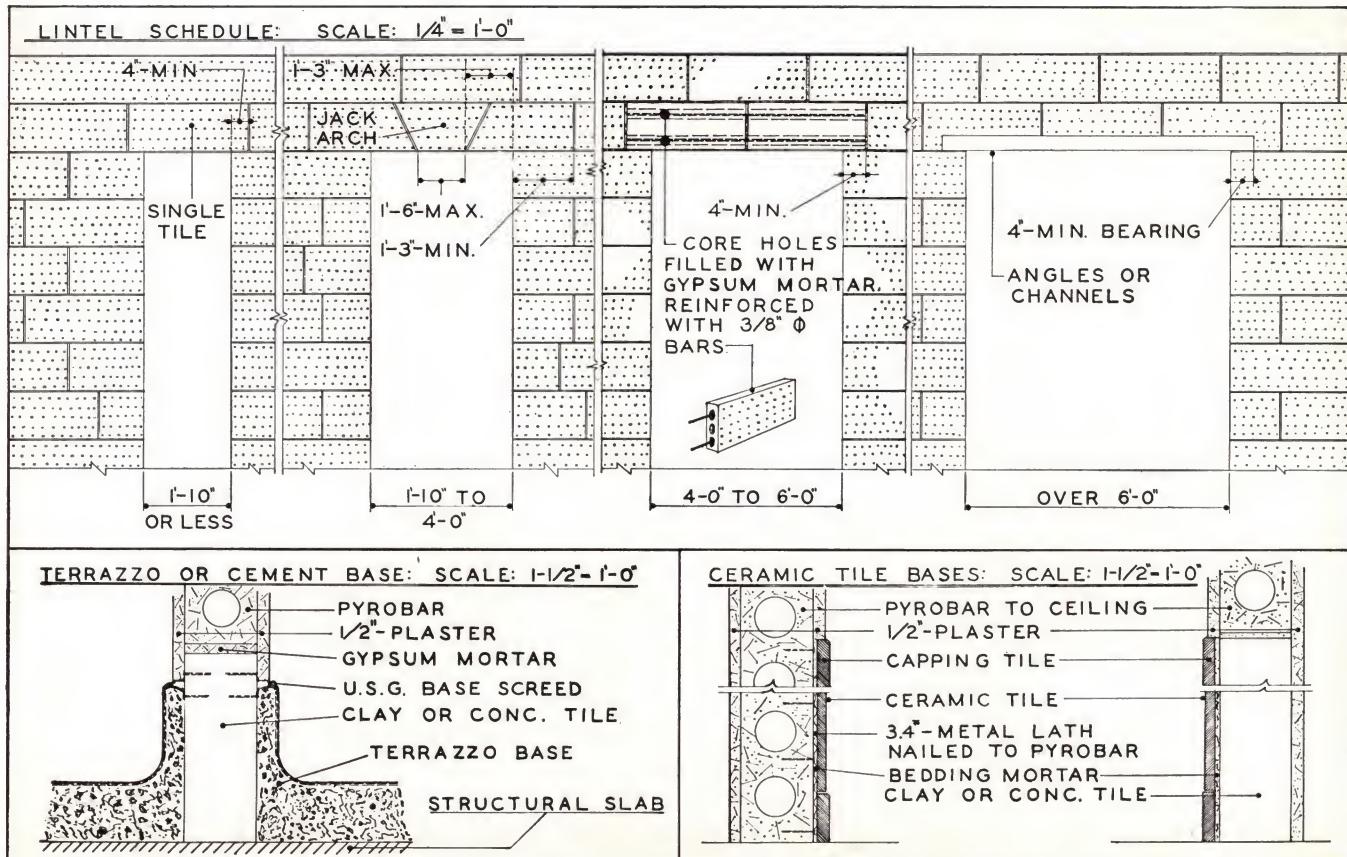
ROOM BASES: SCALE: 1-1/2" - 1'-0"



ATTACHMENTS: SCALE: 1-1/2" - 1'-0"



PYROBAR PARTITION TILE



MASONRY SPECIFICATIONS FOR PYROBAR PARTITION TILE

SCOPE: Unless otherwise shown on plans, all partitions, including pipe chases, shafts, etc., shall be constructed of gypsum partition tile.

MATERIALS

Gypsum Partition Tile shall be PYROBAR, of sizes indicated, as made by United States Gypsum Company.

Cement for mortar shall be RED TOP Partition Tile cement as made by United States Gypsum Company.

Sand shall be clean and sharp, complying with ASTM Designation C-35-39.

Wood Nailing Blocks shall be not less than $\frac{3}{4}$ " thick by 12" long by the thickness of the PYROBAR Tile.

ERECTION

All mortar shall be mixed in proportions of 1 part Partition Tile Cement to 3 parts sand, by weight. Mortar shall not be retempered. After door bucks are erected and rough plumbing and wiring is in place, the first course shall be laid with core holes horizontally by bedding in mortar to a true and straight line according to partition layout as shown on plans. Succeeding courses shall be laid to a line in $\frac{1}{2}$ " thick full mortar beds, uniformly level in each course, and with vertical joints staggered. Cut all joints flush. Partitions shall be well anchored to intersecting masonry walls $12\frac{1}{2}$ " on centers vertically with corrugated wall ties or 16d or 20d cut nails. Wedge tightly at ceiling and slush full with mortar. All chinks and crevices shall be slushed full with mortar.

Wood door bucks shall be anchored to the PYROBAR with 16d cut nails or 3 buck ties each side (approximately 12" from top and bottom and at center) laid in the mortar joints, and jack-arch or lintel construction shall be held $\frac{1}{8}$ " above top plate and not slushed with mortar.

Steel door frames shall be anchored with ties furnished by frame manufacturer, minimum of 3 each side (approximately 12" from top and bottom and at center) in mortar joints and space between tile and hollow frame slushed with mortar.

OPTIONAL INCLUSIONS (See details).

1. *Lintels* shall be formed as follows: Openings of 22" or less with single tile. Openings between 22" and 48" with jack-arch construction. Openings between 48" and 72" with reinforced gypsum lintels. Openings over 72" with steel angles or channels of sufficient size.

2. *Wood Nailing Blocks* shall be nailed to one end of each tile before setting into wall wherever lightweight fixtures or heavy trim, etc., are to be attached to the partition.

3. *Heavy Fixtures* shall be secured to PYROBAR partitions with bolts through the tile, using large steel washers on both sides. Set bolts into place before plastering.

4. *Wood Grounds* for plastering shall be nailed into the tile at base and around openings to provide a $\frac{1}{2}$ " total thickness of plaster.

5. *Ceramic Tile or Portland Cement Base.* Wherever such wall finish is shown on plans or required by specifications, metal lath shall be nailed directly to the PYROBAR. In lieu thereof, structural clay tile, of equal thickness, may be substituted for the PYROBAR wherever such wall finish is required.

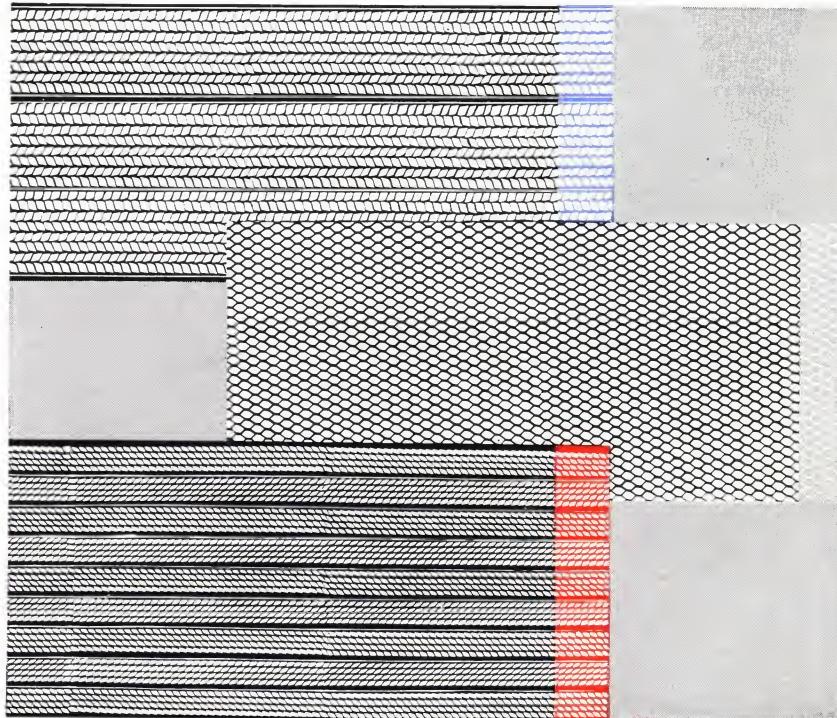
PLASTERING

All PYROBAR partitions shall be plastered with RED TOP Cement Plaster with 3 parts of sand, by weight, or 3 cubic feet light weight aggregate per 100 pounds of plaster (see A.I.A. File 21-A-2). All plaster over rough wood buck and 12 inches down, each side, shall be cut free of buck with edge of trowel, after stiffening but before setting, to allow for expansion of wood.

TECHNICAL INFORMATION

METAL LATH

CORNER BEADS • CHANNELS
 PARTITION SYSTEMS
 RESILIENT SYSTEMS



1949 Issue

United States Gypsum

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USG COLOR-RITE METAL LATH

DESCRIPTION

Metal lath is sheet steel that has been slit and expanded to form a multitude of small mesh openings.

It is made from rust-resisting copper alloy steel and is further protected by dipping the expanded sheet into black asphaltum paint. (Exception: 3.4 lb. diamond mesh when made from galvanized sheets.) For sizes and weights—See Technical Data page 7.

USG COLOR-RITE METAL LATH represents the newest development in the metal lath industry. Ends of bundles are spray painted **red** for all 3.4 lb. lath, **white** for 2.5 lb. diamond mesh and 2.75 lb. Z-rib, **blue** for 4.0 lb. $\frac{3}{8}$ " riblath. This makes warehousing, inventory and job distribution easier and *positive*. An architect may quickly and *visually* inspect a job to make sure the weight lath he specified is used. When the latherer erects the colored end to the right as we recommend, the plasterer saves up to 25 per cent of the scratch coat; saves time and effort because of the uniform "drag" on his trowel since all sheets lay in the same direction.

FUNCTION AND UTILITY

Metal lath is used as a plaster base and as centering for concrete.

FIRE RESISTANT—Metal lath and gypsum plaster provide the fire ratings shown on page 7.

STRENGTH AND REINFORCING—Metal lath embedded within the plaster thickness provides tensile strength in a similar manner to steel reinforcement in concrete slabs, thus providing unusually high resistance to transverse impact. It decreases the hazards of cracks and failures due to structural movement of the frame.

FLEXIBLE—Metal lath is readily shaped to ornamental contours to a degree not possible with other plaster bases.

QUALITY PLASTERING—The use of metal lath as a plaster base is conducive to good plastering because it makes the use of oversanded plaster in the scratch coat impractical.

LONG RANGE ECONOMY—Metal lath is intended for highest quality, fire resistant, durable plastering with low maintenance costs.

Limitations of Use

1. The minimum weights of lath for spacing of supports listed in Technical Data must be observed.

2. The securing of metal lath to supports should be according to the specifications printed herein.

3. Only clean sand should be used for plastering. Unwashed salt water sand should not be used.

4. When abnormally high humidity, moisture or acid fumes are anticipated, our nearest sales office should be consulted.

CAUTION—Failure to observe these limitations may result in failure.

USG METAL LATH TYPES

USG COLOR-RITE DIAMOND MESH LATH

A small mesh (approximately 11,000 meshes per yard) diamond pattern metal plastering base.

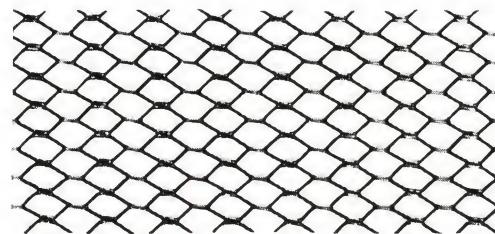
A general all-purpose lath. Best for ornamental, contour plastering. The small meshes conserve plaster and reduce droppings. Nationally available.

Size: 27" x 96".

Weights: 2.5 lbs. (**End Painted White**) and 3.4 lbs. (**End Painted Red**) per square yard.

Limitations of Use

USG Expanded Metal Stuccomesh is preferred as a stucco base.



USG Diamond Mesh Lath

USG COLOR-RITE $\frac{1}{8}$ " RIBLATH (Flat Riblath)

A herringbone mesh pattern, with $\frac{1}{8}$ " deep Z-shaped ribs running lengthwise of the sheet at $1\frac{1}{2}$ " intervals.

Stiffening ribs and herringbone pattern increase rigidity, thus permitting a wider spacing of supports or a saving in the weight of lath required. Particularly suitable for attachment by nailing. Its unusual rigidity permits the application of basecoat plaster, scratch and brown coats, in a "double-up" operation. Small meshes conserve plaster materials.

Size: 24" x 96", 27" x 96".

Weights: 2.75 lbs. (**End Painted White**) and 3.4 lbs. (**End Painted Red**) per square yard.



USG $\frac{1}{8}$ " Riblath

Limitations of Use

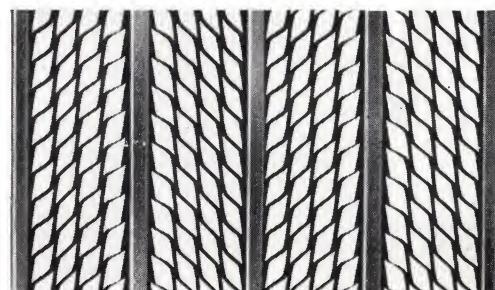
Its rigidity makes it unsuitable for contour plastering. Use Diamond Mesh.

USG COLOR-RITE 4-MESH Z-RIBLATH

A "flat rib" type of lath with smaller mesh openings. Suitable for "double-up" type of plasterings. An excellent nail-on lath, or for tie-on work on flat ceilings.

Size: 27" x 96".

Weights: 2.75 lbs. (**End Painted White**) and 3.4 lbs. (**End Painted Red**) per sq. yd.



USG 4-Mesh Z-Riblath

Limitations of Use

Use Diamond Mesh lath for contour plastering.

"ROCKLATH," "TRUSSTEEL," "PYROBAR" and "BRIDJOINT" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "ROCKLATH" identifies the particular gypsum lath or plaster base; "TRUSSTEEL" identifies the particular truss designed stud; "PYROBAR" identifies the particular gypsum partition tile; "BRIDJOINT" identifies the particular metallic clips for attaching building boards and lath; all manufactured by United States Gypsum Company.

USG COLOR-RITE METAL LATH TYPES (Cont'd)

USG COLOR-RITE $\frac{3}{8}$ " RIBLATH

A herringbone pattern mesh with $\frac{3}{8}$ " deep V-shaped ribs running lengthwise of the sheet at 8" intervals, with inverted intermediate $\frac{1}{8}$ " ribs.

The heavy ribs provide exceptional rigidity. Used when supports are spaced more than 16" o.c. and not more than 24" o.c.

Desirable as a plaster base for heavy duty plastering.

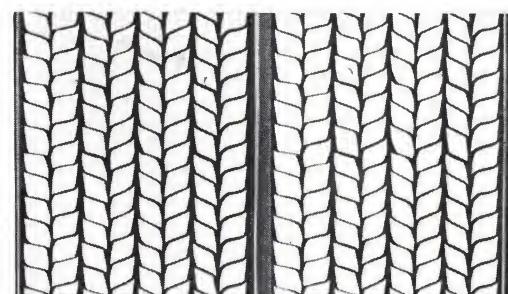
Used as centering and reinforcement for concrete floor and roof slabs. See Technical Data, page 16.

Size: 24" x 96".

Weights: 3.4 lbs. (**End Painted Red**) and 4.0 lbs. (**End Painted Blue**) per square yard.

Limitations of Use

Its extreme rigidity makes $\frac{3}{8}$ " Riblath unsuitable for contour plastering. Use Diamond Mesh Lath.



USG $\frac{3}{8}$ " Riblath

USG $\frac{3}{4}$ " RIBLATH

A herringbone pattern mesh with $\frac{3}{4}$ " deep V-shaped ribs lengthwise of the lath at 4" intervals.

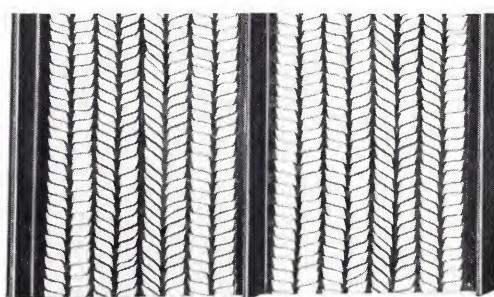
A structural lath, providing the dual functions of centering and reinforcement for concrete floor and roof slabs. (See Data on page 16.)

Sizes: 2' x 8', 2' x 10' and 2' x 12'.

Weights: .60 lb. and .75 lb. per square foot.

Limitations of Use

Not recommended as a plastering lath.



USG $\frac{3}{4}$ " Riblath

USG EXPANDED METAL STUCCOMESH

A $1\frac{3}{8}$ " x $3\frac{1}{8}$ " diamond pattern mesh made of copper bearing steel, asphaltum painted. USG Stucco Furring nails are $1\frac{1}{2}$ " long and galvanized. They are equipped with a device which supports the mesh and spaces it $\frac{3}{8}$ " from the sheathing.

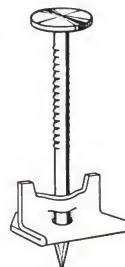
Special Functions

Designed as a base for exterior stucco, hand or pneumatically applied. The furring nails, equipped with $\frac{3}{8}$ " sliding spacers, provide for rapid erection of rigid furring and position the mesh for positive reinforcement of the stucco.

Limitations of Use

Should not be applied without using STUCCOMESH furring nails.

When used over sheathing other than wood, longer nails, providing a minimum penetration of $1\frac{1}{8}$ " into studs, should be substituted for the $1\frac{1}{2}$ " nails specified.



Stuccomesh Nail



USG Expanded Metal STUCCOMESH

Specification

USG STUCCOMESH shall be applied with USG Stucco Furring nails spaced not to exceed 16" horizontally and 6" vertically. Adjacent sheets shall be lapped at sides and ends by at least one diamond mesh. End laps shall be made over supports and staggered. All laps between supports shall be tied every 6" with 18 gauge galvanized annealed tie wire.

USG LATHING ACCESSORIES

USG CORNER BEADS

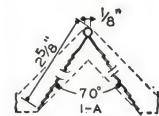
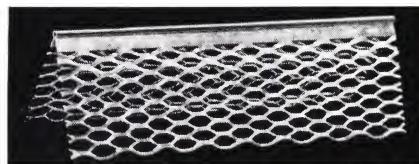
USG corner beads should be used on all external plaster angles to provide: (1) plaster protection, (2) true and straight lines at angles and (3) grounds for plastering.

Lengths: 8', 9', 10' and 12'. Gauge of Steel: 26 gauge galvanized steel. (See following pages)

USG LATHING ACCESSORIES (Cont'd)

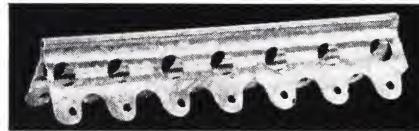
1-A EXPANDED CORNER BEAD

Its wide expanded flanges are easily flexed. Preferred for irregular corners. Provides increased reinforcement close to nose of bead. Made from 26 gauge galvanized steel.



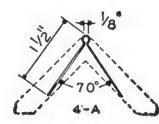
2-A SCALLOPED FLANGE CORNER BEAD

A perforated flange, rigid type bead with projecting scallops that provide good nailing for irregular corners. Made from 26 gauge galvanized steel.



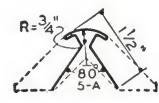
4-A FLEXIBLE CORNER BEAD

The general purpose corner bead. Economical and most generally used. By snipping flanges, this bead may be bent to any curved design (for archways, telephone niches, etc.). Made from 26 gauge galvanized steel.



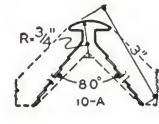
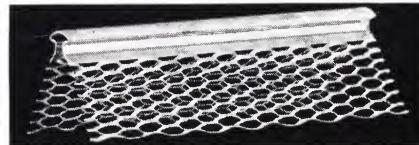
5-A BULL NOSE CORNER BEAD

A $3/4$ " radius bull nose bead with short flange. Used for rounded corners. Can be secured to corners with No. 9-A Corner Bead Clips attached to flanges, where wide nailing flanges are required. Made from 26 gauge galvanized steel.



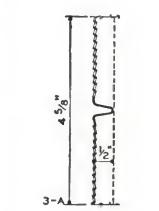
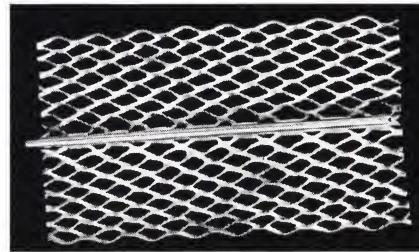
10-A EXPANDED BULL NOSE CORNER BEAD

A bull nose bead similar to above, but with $2\frac{1}{2}$ " wide expanded flanges. Especially suitable on irregular corners. Made from 26 gauge galvanized steel. (24 gauge on special order.)



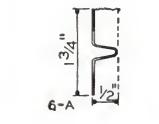
3-A EXPANDED BASE SCREED

A flush type $1/2$ " ground with wide flexible expanded flanges for added reinforcement or for attachment to uneven surfaces. Used as a dividing point between plastered surfaces and cement in terrazzo. Made in 10 foot lengths from 26 gauge galvanized steel.



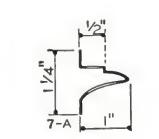
6-A PLAIN BASE SCREED

A flush type $1/2$ " ground (job shimmed for $3/4$ " grounds), used at the juncture of differing finishes; as between plaster and terrazzo surfaces. Made in 10 foot lengths only from 26 gauge galvanized steel.



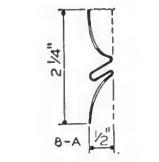
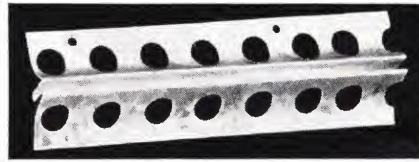
7-A CURVED POINT BASE SCREED

For use where base or wainscot is to project beyond the plastered surface. Made for $1/2$ " plaster ground (job shimmed for $3/4$ " grounds) and $1/2$ " projection. Length 10 feet—26 gauge galvanized steel.



8-A PICTURE MOULD

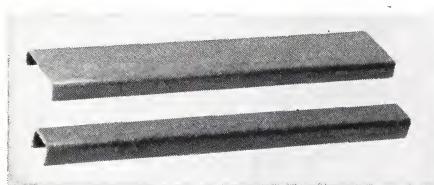
A concealed mould. Attached to lath and plastered flush to the notch opening. Grounds $1/2$ " (job shimmed for $3/4$ " grounds)—length 10 feet—26 gauge galvanized steel.



(See next page)

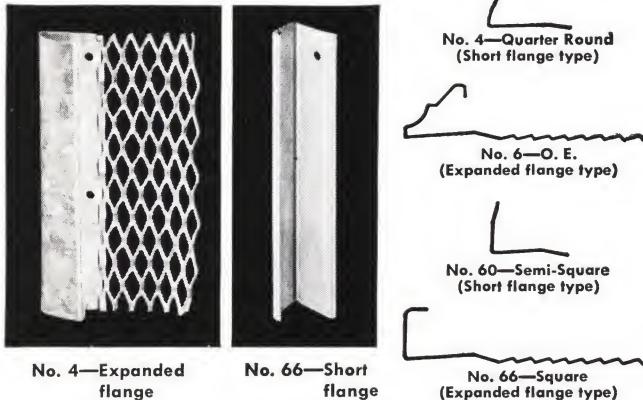
USG LATHING ACCESSORIES (Cont'd)

LATHING CHANNELS



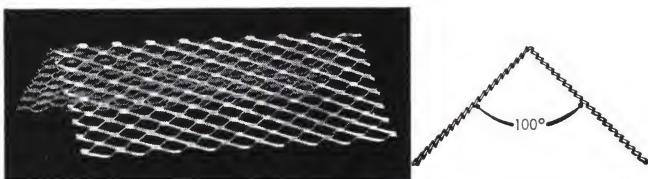
Strong, lightweight channel sections used for furring, suspended ceilings, partitions, ornamental lathing, etc. Sizes: $\frac{3}{4}$ " or $1\frac{1}{2}$ " deep, 16' or 20' lengths. Weights: $\frac{3}{4}$ ", 300 lbs. per M Lin. ft., $1\frac{1}{2}$ ", 475 lbs. per M Lin. ft. Made of 16 gauge steel, black asphaltum painted.

METAL DOOR CASINGS



Used as a plaster stop and ground at window and door openings, eliminating wood trim. Available in No. 4—Quarter Round, No. 6—O.G., No. 60—Semi-Square and No. 66—Square, either short or expanded flange, 7', 8', and 10' lengths, and for $\frac{1}{2}$ " or $\frac{3}{4}$ " plaster grounds. Made from 24 gauge galvanized steel.

USG CORNERITE AND STRIPLATH



Cornerite is a 4" or 6" wide strip of 2.5 lb. copper alloy painted, Diamond Mesh lath, bent lengthwise in the center, to form a 100° angle, length 96".

Striplath is a 3" wide strip of 2.5 lb. Diamond Mesh lath, copper alloy painted, 96" long.

Function and Utility

Cornerite should be used on all internal plaster angles as corner reinforcement where metal lath is not lapped or carried around corners; over non-ferrous lath anchored to the lath; over corners of masonry constructions. (Cornerite is optional in Resilient, BRIDGEJOINT* lathing system. If used, it is secured to the lath, not the supports.)

Striplath is used as a plaster reinforcement over joints of non-metallic lathing bases. Used with perforated ROCK-LATH* plaster base for ceilings requiring a 1 hour fire rating.

USG CEILING RUNNER

A specially designed steel angle for fastening to the ceiling in order to provide positive anchorage and alignment of $\frac{3}{4}$ " channels in either solid partition construction or exterior wall furring.

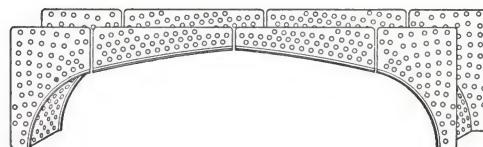
USG GALVANIZED TIE WIRE

A pliable, annealed wire for tying metal lath; 18 and 16 gauge coils. (8 gauge galvanized annealed coils available for hangers.)

ATTACHMENT CLIPS

Special wire clips designed for attachment of Riblath to top or bottom flanges ($1\frac{1}{2}$ " to $4\frac{5}{8}$ " widths) of steel joists.

USG METAL ARCHES



DESCRIPTION

USG Metal Arches are made of galvanized sheet metal, perforated for plaster keying. They are made in three styles: True Circle, Gothic and Elliptic, and in seven sizes. Many variations in size and shape may be obtained by combining different sections of different arches.

FUNCTION AND UTILITY

USG Metal Arches are equally suitable for new work or remodeling. They provide a plastering base of symmetry and uniformity that is quick and easy to install.

Metal Arches combine into one unit the plaster base, plaster grounds and corner bead otherwise required in making such arched openings. No special preparation of the rough opening is necessary. The metal arch sections fit perfectly over 2 x 4 studs and any type of lath, or over masonry of similar thickness. Special job conditions are easily handled.

THREE STYLES SEVEN SIZES

True Circle Arch

No. 11—10" radius
No. 22— $15\frac{3}{4}$ " radius

Gothic Arch

No. 33—2' 7 $\frac{1}{2}$ " finished opening
No. 44—4' 1 $\frac{1}{2}$ " finished opening

Elliptical Arch

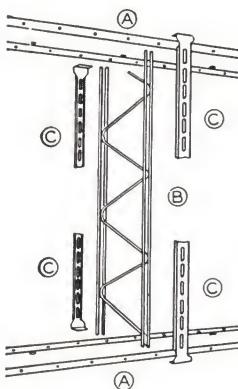
No. 36—3' 1 $\frac{1}{2}$ " finished opening
No. 55—5' 1 $\frac{1}{2}$ " finished opening
No. 66—5' 10 $\frac{1}{2}$ " finished opening

TABLE OF ERECTION DETAILS

Style of Arch	Width of Finished Opening	Dimension from Arch Base to Header	Spacing between Studs or Bucks (Rough Opening)
No. 11	20"	10"	21 $\frac{1}{2}$ "
No. 22	31 $\frac{1}{2}$ "	15 $\frac{3}{4}$ "	33"
No. 33	31 $\frac{1}{2}$ "	11 $\frac{5}{8}$ "	33"
No. 36	37 $\frac{1}{2}$ "	11"	39"
No. 44	49 $\frac{1}{2}$ "	12 $\frac{1}{2}$ "	51"
No. 55	61 $\frac{1}{2}$ "	13"	63"
No. 66	70 $\frac{1}{2}$ "	13"	72"

*Trademark Reg. U. S. Pat. Off.

USG TRUSSTEEL* STUDS



DESCRIPTION

This is a truss design stud for the erection of hollow non-load bearing fire-proof partitions. Outer chords and diagonal struts are constructed of round rods. As shown in the sketch, the component parts are (A) 24 gauge top and bottom runner tracks, (B) 7 gauge rod studs spot welded at all contact points, (C) attachment shoes for connecting the studs to the runners.

Sizes—Consult technical data below.

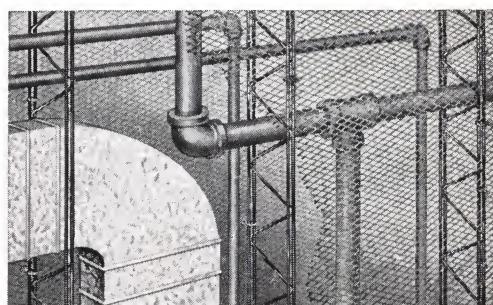
FUNCTION AND UTILITY

CONCEALS PIPES AND CONDUITS—The "hollow stud" structure permits concealment of pipes, conduits, air ducts, etc., within the finished wall. Diagonal struts are easily cut to accommodate large ducts.

LIGHT WEIGHT—The finished plastered partition weighs 13 to 17 pounds per square foot of partition, generally less than other partitions of equal thickness.

FIREPROOF—The gypsum plaster over USG Metal Lath protects the studs from "heat distortion," giving a one hour fire rating.

STRONG—Strength of studs is derived from strategic use of metal in a truss design—not on bulk weight. Tests made by recognized authorities on panels of same size, indicated that TRUSSTEEL Studs withstood at least 30 per cent greater transverse loads before failure than $1\frac{1}{2}$ " steel channels similarly lathed and plastered.



ADJUSTABLE HEIGHT—Attachment shoes permit an upward adjustment up to 4" for varying ceiling heights.

ECONOMICAL, because—

- (a) Material cost is moderate.
- (b) Erection is speedy, only ordinary lather's tools required.
- (c) Light weight generally permits partition location at any place without special structural framing.

LIMITATIONS

1. USG TRUSSTEEL Studs are designed for non-load bearing partitions only.
2. Partition heights should not exceed the maximum heights in technical data table below.
3. Stud spacing is determined by the type of lath. See spacings in technical data.

TECHNICAL DATA

Stud Width	Finished (1) Wall Thickness	Maximum Partition Height	NATIONAL BUREAU OF STANDARDS FIRE RATINGS (2)		Sound (5) Transmission Loss in Decibels
			(3)	(4)	
$3\frac{1}{4}$ "	$4\frac{3}{4}$ "	16 Ft.	1 hour	2 hours	36.9
4"	$5\frac{1}{2}$ "	18 Ft.	1 hour	2 hours	36.9
6"	$7\frac{1}{2}$ "	20 Ft.	1 hour	2 hours	36.9

Approximate plastered partition weight per square foot: 13 lbs. on ROCKLATH, 17 lbs. on Metal Lath.

Stud Lengths: 7' 0" to 20' 0" in increments of 3".

Runner Tracks: $3\frac{1}{4}$ ", 4" and 6" widths by 8'0" long.

Notes:

1. Based on $\frac{3}{4}$ " plaster thickness from face of stud. Mill work should be specified to fit these wall thicknesses.
2. Fire Ratings are as given for such partitions in National Bureau of Standards Report BMS-92.
3. Ratings are for $\frac{3}{4}$ " thick gypsum plaster, sanded 1:2-1:2 applied over Metal Lath. Rating of plaster sanded 1:2-1:3 is 45 minutes for $\frac{3}{4}$ " thickness and 1 hour for $\frac{7}{8}$ " thickness.
4. Ratings are for $\frac{7}{8}$ " thick neat gypsum plaster, or, 1" thick gypsum plaster sanded 1: $\frac{1}{2}$ -1: $\frac{1}{2}$, applied over Metal Lath. Neat gypsum plaster 1" thick applied over Metal Lath is accorded a $2\frac{1}{2}$ hour rating.
5. Sound Transmission Loss is as given in National Bureau of Standards Report BMS-17 for such partitions. Figures are for the average of 128 to 4086 cycles.

RECOMMENDED STUD SPACING

Type of Lath	TRUSSTEEL Stud Spacing
2.5 lb. Diamond Mesh Lath	12 Inches
3.4 lb. Diamond Mesh Lath	16 Inches
2.75 lb. $\frac{1}{8}$ " Riblath	16 Inches
3.4 lb. $\frac{1}{8}$ " Riblath	19 Inches
3.4 lb. $\frac{3}{8}$ " Riblath	24 Inches
4.0 lb. $\frac{3}{8}$ " Riblath	24 Inches
Plain or Perforated ROCKLATH	16 Inches

USG METAL LATH DATA

TECHNICAL DATA

Type of Lath	Weight per Square Yard	Type of Steel	Size Sheets	Maximum Allowable Spacings			
				Vertical Supports		Horizontal Supports	
				Wood	Metal	Wood or Concrete	Metal
Diamond Mesh	2.5 lb.	Copper Alloy (1)	27"x96"	16"	16"	12"	(4)
Diamond Mesh	3.4 lb.	Copper Alloy	27"x96"	16"	16"	16"	16"
Diamond Mesh	3.4 lb.	Galvanized (2)	27"x96"	16"	16"	16"	16"
1/8" Z-Rib	2.75 lb.	Copper Alloy	27"x96"	16"	16"	16"	12"
1/8" Z-Rib	3.4 lb.	Copper Alloy	27"x96"	19"	24"	19"	19"
3/8" Rib	3.4 lb.	Copper Alloy	24"x96"	24"	24"	24"	24"
3/8" Rib	4.0 lb.	Copper Alloy	24"x96"	24"	24"	24"	24"
STUCCOMESH	1.8 lb.	Copper Alloy	48"x99"	16" (3)			
STUCCOMESH	3.6 lb.	Copper Alloy	48"x99"	16" (3)			
3/4" Rib Lath		Copper Alloy	10'&12', 2'x8'				

See table for 3/4" Riblath, page 16.

All metal lath (except galvanized) is painted with a rust-inhibitive black asphaltum paint.

Notes (1) Copper alloy lath contains from 0.2% to 0.25% pure copper. (2) Galvanized lath is cut from galvanized sheets.

(3) STUCCOMESH generally applied over exterior sheathing. (4) Not recommended, except for fireproofing of steel shapes.

(5) Including vertical furring.

FIRE TEST DATA

Panel Type

Construction	Type Base	Plaster and Aggregate	Thickness	Rating and Reference
PARTITIONS				
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	3/4"	45 Minutes (1)
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:2	3/4"	1 Hour (1)
Wood Frame	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	7/8"	1 Hour (1)
Wood Frame	Expanded Metal Lath	Gypsum Wood Fiber	3/4"	1 1/2 Hour (1)
Wood Frame	Expanded Metal Lath	Portland Cement-Sand, 1:2, 1:3	3/4"	30 Minutes (1)
Wood Frame	Expanded Metal Lath	Portland Cement-Sand, 1:2, 1:3	7/8"	45 Minutes (1)
Wood Frame	Expanded Metal Lath	Portland Cement-Lime-Sand, 1:2:8, 1:2:10	3/4"	30 Minutes (1)
Wood Frame	Expanded Metal Lath	Gypsum-Vermiculite 100:2 1/2, 100:3 1/2	3/4"	1 Hour (2)
Solid	Expanded Metal Lath	Gypsum Perlite, 100:2 1/2, 100:2 1/2	1 1/2"	1 Hour (3)
Solid	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:2	2"	1 Hour (3)
Solid	Expanded Metal Lath	Gypsum Wood Fiber	2 1/4"	2 Hour (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	3/4"	45 Minutes (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:2	3/4"	1 Hour (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	7/8"	1 Hour (1)
TRUSSTEEL Studs	Expanded Metal Lath	Gypsum Wood Fiber	1/8"	2 Hour (1)
CEILINGS				
Wood Frame	Expanded Metal Lath (A)	Gypsum Sand, 1:2, 1:3	3/4"	1 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	3/4"	2 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	3/4"	3 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum Wood Fiber	1"	3 Hour (1)
Steel Joists (B)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	1"	4 Hour (1)
Cellular Steel Floor (C)	Expanded Metal Lath	Gypsum Wood Fiber	1"	4 Hour (1)
Cellular Steel Floor (D)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	1"	4 Hour (1)
Cellular Steel Floor (C)	Expanded Metal Lath	Gypsum-Vermiculite, 100:3, 100:3 (4)	1"	4 Hour (2)
Suspended Channel (E)	Expanded Metal Lath	Gypsum-Perlite, 100:2, 100:3	1"	4 Hour (2)
COLUMNS				
Steel Section	Expanded Metal Lath	Gypsum-Sand, 1:2, 1:3	3/4"	1 Hour (1)
Steel Section (F)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	1"	3 Hour (2)
Steel Section (F)	Expanded Metal Lath	Gypsum-Vermiculite, 100:2, 100:3	1 1/2"	4 Hour (2)
Steel Section (F)	Expanded Metal Lath	Gypsum-Perlite 100:3, 100:3 (4)	1"	3 Hour (2)

(1) National Bureau of Standards.

(2) Underwriters' Laboratories.

(3) Nationally recognized fire testing laboratory—name on request.

(4) Great Lakes Carbon Corporation's "Permalite" Perlite.

(A) Lath applied with 1 1/2" 11 gauge, 7/16" head barbed roofing nails, 6" o.c.

(B) 2 1/2" reinforced concrete slab on Riblath or 2" precast gypsum tile above.

(C) Ceiling suspended 9" or more below floor slab.

(D) Ceiling suspended 3" or more below floor slab.

(E) Incombustible construction above.

(F) Lath furred 1 1/4" from column with space between lath and flanges filled with plaster.

SOUND TRANSMISSION LOSS—PARTITIONS

2 x 4 wood studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.

39.2 decibels (1)

3 1/4" TRUSSTEEL Studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.

36.9 decibels (1)

2" solid metal lath and gypsum plaster smooth white coat on both sides.

37.6 decibels (1)

(1) National Bureau of Standards—average 128 to 4096 cycles.

METAL LATH AND LATHING SPECIFICATIONS

(Paragraphs A, B, and C are recommended as basic requirements for all metal lathing specifications. Paragraphs D-1, D-2, etc., apply to the erection of lath for various constructions and only those applicable to the job should be included.)

A. SCOPE

Unless otherwise indicated, all lathing and furring shall be of metal as herein described. (Or enumerate the areas.)

B. MATERIALS

Metal lath shall be USG Color-Rite Metal Lath manufactured by United States Gypsum Company, made from copper alloy steel sheets and shall be given a protective coating of rust-inhibitive paint after fabrication. End colored to identify weight. (Red for 3.4; White for 2.5 Diamond Mesh and 2.75 flat Riblath; Blue for 4.0 Riblath.)

Where galvanized metal lath is required, it shall be 3.4 Diamond Mesh lath.

The weight of metal lath shall be not less than that required by the current edition of The American Standards Association's "Standard Specifications for Gypsum Plastering," or the printed specifications of the manufacturer for the various spacings of supports.

Metal plastering accessories such as corner beads, base screeds, concealed picture moulds, metal casings, etc., shall be formed of galvanized steel sheets, not less than 26 gauge and manufactured by United States Gypsum Company.

Channels for furring shall be cold rolled steel channels having a protective coating of rust-inhibitive paint, manufactured by United States Gypsum Company. Channels shall not exceed the limitations of span as set forth in current issue of A.S.A. specifications or the manufacturer's printed limitations.

Metal studs shall be TRUSSTEEL studs, manufactured by United States Gypsum Company, formed with not less than 7 gauge wire and shall be given a protective coating of rust-inhibitive paint. Stud sizes shall be as indicated on the drawings.

Tie wire shall be 18 gauge soft annealed galvanized tie wire, unless otherwise indicated. Cornerite and Striplath shall be manufactured from 2.5 lb. Diamond Mesh lath, copper alloy, having a coating of rust-inhibitive paint and manufactured by United States Gypsum Company.

C. ERECTION OF METAL LATH

Metal lath shall be applied with the long dimension of the sheet across the supports, with the color end to the lather's right. Riblath with ribs against the supports.

The ends of all lath shall be lapped not less than 1" and the laps shall occur over the supports.

The sides of Diamond Mesh Lath shall be lapped not less than $\frac{1}{2}$ ". The sides of Riblath shall be lapped by nesting outside ribs. Side laps shall be secured to every support unless otherwise specified, and shall be wire-tied between supports not to exceed 9" intervals.

All metal lath shall be started at one support away from the corner and be bent into the corner and carried on to the abutting wall to avoid a joint in the corner; provided that where $\frac{3}{8}$ " Riblath is used, it shall be butted into the corners and Cornerite shall be applied over the abutting lath and wired at 6" intervals along each edge in corners; Cornerite shall be tie-wired along the edge only, not in the corner. All metal lath shall be placed so that the lower sheet overlaps the upper.

Corner beads, base screeds, picture moulds, etc., shall be positioned by securely wiring to the metal lath, at not less than 12" intervals. Attachment to masonry or other solid construction shall be secured by nailing at intervals of not less than 12". $\frac{1}{2}$ " concrete stub nails shall be used for attachment to concrete. Wood grounds shall be set true to line to provide not less than $\frac{5}{8}$ " thickness of plaster over the metal lath and securely wired or nailed into place.

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS

D-1. Nailing to wood supports. Metal lath shall be secured to framing at intervals not to exceed 6" o.c. by one of the following methods:

For side walls, 4d common nails driven to $\frac{3}{4}$ " penetration and bent over to engage at least 3 strands of Diamond Mesh lath or a rib of Riblath; 1" roof nails, $\frac{1}{16}$ " head, driven home to engage at least 2 strands of Diamond Mesh or through the rib of Riblath; 1" 14 gauge wire staples, driven home without crushing the lath strands and engaging at least 2 strands of

Diamond Mesh lath or the rib of Riblath; except that $\frac{3}{8}$ " Riblath shall be secured with nails or staples having sufficient length to engage the rib and provide a $\frac{3}{4}$ " minimum penetration.

Diamond Mesh and $\frac{1}{8}$ " Riblath shall be secured to ceiling framing with $1\frac{1}{2}$ " 11 gauge barb roofing nails with $\frac{1}{16}$ " head, to engage at least 2 strands of Diamond Mesh or through the rib of $\frac{1}{8}$ " Riblath. $\frac{3}{8}$ " Riblath shall be secured with nails or staples that provide at least $1\frac{3}{8}$ " penetration.

D-2. Metal lath tied and nailed to joists. (Recommended where undue vibration is expected and for additional safety.)

16d common nails spaced 24" or 27" o.c. depending upon width of lath, shall be driven horizontally through alternate joists at least 2" above the lower edge; the point and head to

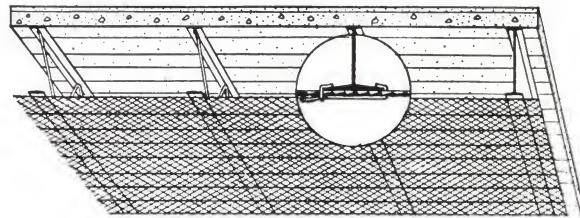
project equally from the sides of joist.

Metal lath shall be secured to wood joists in the manner described for Nail-on work, but in addition, the metal lath side laps shall be secured to the nails with 2 strands of 18 gauge tie wire, providing at least 3 twists around the lath.

METAL LATH AND LATHING SPECIFICATIONS

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (cont.)

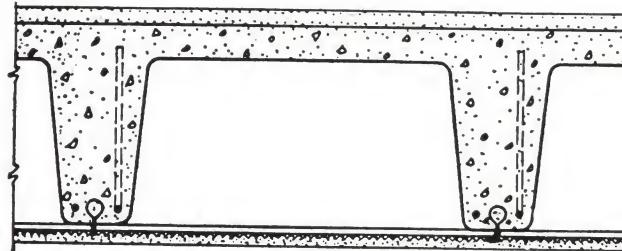
D-3. Metal lath secured to steel joists. Metal lath shall be secured to the lower chord of steel joist with 2 strands of 16 gauge tie wire or 4 strands of 18 gauge tie wire at intervals not to exceed 6" o.c. or with special galvanized attachment clips. Free ends of tie wire shall be given at least 3 twists.



D-4. Metal lath attached to rib concrete construction. Hangers for attaching metal lath directly to underside of concrete ribs (approximately 25" on centers) shall be placed in forms before concrete is poured and shall consist of hairpin, hook, loop hangers or other inserts and shall be provided with a loop or similar deformation for embedment in the concrete. Hangers shall be not less than 14 gauge galvanized annealed wire when twisted as in tie wire and not less than 10 gauge galvanized wire when struck over to support the lath. Spacing of hangers shall not exceed 5" along bottom of ribs.

Where ribs are spaced more than 25" on centers, 12 gauge galvanized wire hangers shall be placed through the center of the top surface of the forms at 36" centers and looped to engage the concrete. These hangers shall support $\frac{3}{4}$ " cold rolled channels running parallel to and between ribs.

Metal lath shall be secured to the concrete ribs by twisting the 14 gauge hangers as for tie wire or by clinching 10 gauge hangers. For ribs spaced more than 25" on centers, lath shall also be tied to channels with 2 strands of 18 gauge tie wire at intervals not to exceed 6".



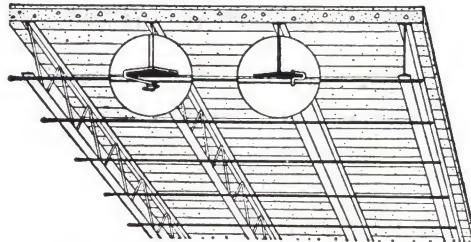
D-5. Furred ceiling on wood joists. 16d common nails, spaced to conform to spacing of furring members, shall be driven horizontally through each joist at least 2" above the lower edge; the point and head to project equally from the side of joist.

Channel or rod furring shall be attached, at right angles to

joists, flush against the bottom edges by securely wire-tying the furring to each nail with not less than 4 strands of 18 gauge tie wire, saddle-tied. Metal lath shall be attached to the steel furring with tie wires at intervals not to exceed 6".

D-6. Furred ceiling on steel joists. Furring members shall be $\frac{3}{4}$ " cold rolled channels and shall not exceed a spacing of (select spacing from table, page 10), and shall be erected at right angles to the steel joists. They shall be securely attached to the bottom chords with 2 strands 16 gauge or 4 strands 18 gauge galvanized wire or other approved attachment of equal strength.

Metal lath shall be attached to steel furring with wire ties at intervals not to exceed 6".



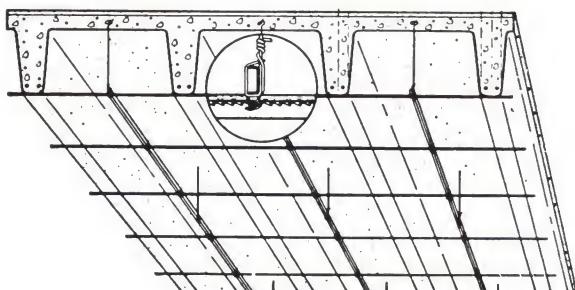
D-7. Furred ceiling on rib concrete construction. For concrete ribs centered at approximately 25", channel runners shall be supported against bottom of ribs by hangers of two 14 gauge galvanized wires, or other hangers of equal strength with looped ends embedded at least 2" within the concrete. Hangers shall be placed in forms before concrete is poured and spaced 36" on centers, to engage $\frac{3}{4}$ " channels running parallel to the ribs. Hangers shall be securely saddle-tied or wrapped around the channels.

Cross furring members shall be saddle-tied to the channel runners with 2 strands of 16 gauge galvanized tie wire at each intersection.

Metal lath shall be secured to the cross furring with tie wires at intervals not to exceed 6".

For concrete rib spacings greater than 25" on centers hangers

shall be two strands of 12 or one strand of 10 gauge galvanized wire supporting not more than 12 sq. ft.; two 11 gauge or one 8 gauge galvanized wire supporting not more than 16 sq. ft. of ceiling area.



METAL LATH AND LATHING SPECIFICATIONS

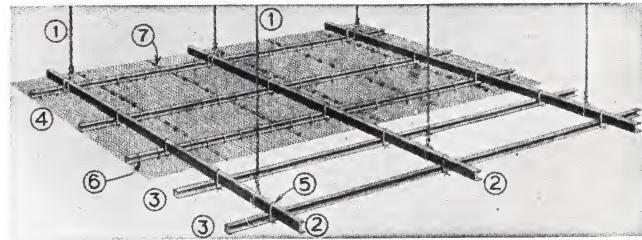
SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (Cont.)

D-8. Suspended metal lath ceilings. Hangers (1) shall be No. 8 gauge galvanized wire, $\frac{3}{16}$ " round mild steel rods or $1'' \times \frac{3}{16}$ " flat mild steel straps; spaced not to exceed 4' both directions; and shall support no more than 16 square feet of ceiling area. The use of special inserts may be used subject to the architect's approval.

Hangers shall be of ample length. Hangers (without inserts) shall be secured to steel reinforcement in concrete with cinder aggregate and shall be either secured to steel reinforcement or looped and embedded 2 inches in concrete with other types of aggregates.

$1\frac{1}{2}$ " cold rolled channels (2) shall be attached to wire or rod hangers by means of a saddle tie, or 3 twists of hanger around the channel. In lieu of wire or rod hangers, flat steel hangers shall be secured to runner channels and inserts with $\frac{3}{8}$ " diameter bolts, the punched hole to be not less than $\frac{3}{8}$ " from ends of hanger. Runner channels shall be placed true and level and properly positioned for the indicated ceiling height.

$\frac{3}{4}$ " furring channels (3) shall be securely saddle-tied to the $1\frac{1}{2}$ " runner channels by 2 strands of 16 gauge tie wire (5) at each intersection.



Metal lath (4) shall be secured to the furring channels by tie wires (6) at intervals not to exceed 6". Side laps shall be wire-tied (7) between supports at intervals not exceeding 9". The spacing of the furring channels shall be (select from table below) and the weight of lath shall be (select type and weight from table on page 7).

Where hangers support more than 16 sq. ft. but not more than 25 sq. ft., use $1'' \times \frac{3}{16}$ " flats spaced not more than 5' o.c. Main furring runners shall be not less than 2" hot rolled channels.

D-9. Metal lath vertical furring.

Attachments shall consist of nails driven securely into concrete or into masonry joints, or short pieces of $\frac{3}{4}$ " channels used as anchors driven into masonry joints. They shall be spaced not to exceed two feet on center, horizontally, and in accordance with the spacing of horizontal channels, vertically, and shall project a proper distance from the face of the wall to permit ties to be made.

Note: Where damp-proofing has been damaged, in installation of attachments, it shall be pointed with the same material before proceeding with the installation of the furring.

Horizontal members shall be not less than $\frac{3}{4}$ " cold-rolled channels. They shall be spaced not to exceed 4'6" on center with the lower and upper channels not more than 6" from the floor and ceiling, respectively, and not less than $\frac{1}{4}$ " from the face of the wall. They shall be securely tied to attachments

with 3 strands of 18 gauge galvanized soft annealed wire, or equivalent devices.

Vertical members shall be not less than $\frac{3}{4}$ " cold-rolled channels. They shall be spaced (specify according to table below). They shall be securely saddle-tied to horizontal members with 3 loops of 18 gauge galvanized soft annealed wire, or equivalent devices, at each crossing, and securely anchored to the floor and ceiling construction. Where furring is a considerable distance from the face of the wall, channel braces to the wall shall be provided approximately 2 feet on center, and, where the height exceeds 16 feet, special truss bracing shall be provided to prevent concentration of load on the floor construction.

Note: Special devices which are the equivalent of, or better than, the nail or channel attachments may be used in lieu thereof.

SIZE AND SPACING OF FURRING MEMBERS

Spacing of Main Runners (Also Steel Joists)	Size and Type of Cross Furring	Maximum Spacing of Furring
Up to 2 Feet	$\frac{1}{4}$ " Pencil Rods or $\frac{3}{4}$ " Channels	12"
Up to 2 Feet	$\frac{3}{8}$ " Pencil Rods or $\frac{3}{4}$ " Channels	19"
Up to 2 Ft. 6 In.	$\frac{3}{8}$ " Pencil Rods or $\frac{3}{4}$ " Channels	12"
Up to 3 Feet	$\frac{3}{4}$ " Cold Rolled Channels	24"
Up to 3 Ft. 6 In.	$\frac{3}{4}$ " Cold Rolled Channels	19"
Up to 4 Feet	$\frac{3}{4}$ " Cold Rolled Channels	16"

See Technical Data, page 6, for type and weight of lath.

2" SOLID METAL LATH AND PLASTER PARTITION

DESCRIPTION

A non-load bearing partition of metal lath, channels and plaster that finishes to an overall thickness of 2".

FUNCTION

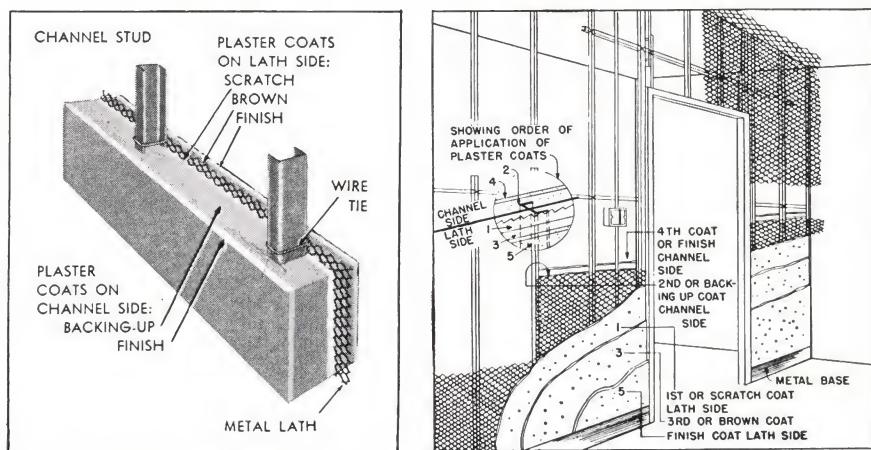
Space saving. Saves 40 to 60% of the space occupied by conventional partitions. In every five lineal feet, a 2" partition creates one extra square foot of useable space over a 4½" partition.

Light weight. Eighteen pounds per partition square foot. Compared to more conventional partitions there is a dead load saving of as much as 30 per cent. Saves structural steel.

Fire resistance. Accorded a one hour fire rating by tests conducted by a nationally recognized fire testing laboratory (name on request). See table of fire ratings on page 7.

Crack resistance. Metal lath as a steel reinforcing, provides structural strength. Such partitions have performed remarkably well when subjected to earthquakes and explosions.

Sound transmission rating. 37.6 decibel transmission loss (average of 128 to 4096 cycles) as given in National Bureau of Standards Report BMS-17.



TECHNICAL DATA

Height of Partition	Thickness of Partition	Size of Channel Stud	Permissible Length of Partition	Spacing of Studs	Lath Recommended
Up to 12'	2"	¾"	No Limitation	16"	2.5 lb. Diamond Mesh
Up to 14'	2"	¾"	24 Ft.	16"	3.4 lb. Diamond Mesh
Up to 16'	2½"	¾"	32 Ft.	16"	2.75 lb. 1/8" Riblath
Up to 18'	2½"	¾"	27 Ft.	24" (1)	3.4 lb. 1/8" Riblath
Up to 20'	2¾"	¾"	30 Ft.	24"	3.4 lb. 3/8" Riblath
Up to 24'	3"	1½"	36 Ft.	24"	4.0 lb. 3/8" Riblath
Up to 30'	3½"	1½"	30 Ft.		

(1) This stud spacing permissible for partition heights not exceeding 16 feet. For greater heights, permanent horizontal stiffener channels must be secured to channel side of partition every 6 feet vertically, or spacings shall be reduced 25 percent.

SPECIFICATIONS

MATERIAL

Channel studding shall be not less than ¾" cold rolled channels and metal lath shall be (as selected from table above), manufactured by United States Gypsum Company.

LATHING

Contractor shall make accurate location layout of partitions according to plan. Channel studding shall be spaced (as selected from table above), and attached to the floor and ceiling with USG Stud Shoes and Ceiling Runner, or by other approved attachments or methods.

Where two-piece studs are necessary, they shall be spliced within 2 feet of ceiling by lapping not less than 8", with flanges interlocked and securely wired in at least two places not less than 6" nor more than 12" apart.

A double channel stud, continuous from floor to ceiling, shall be used adjacent to and at each side of door bucks. Where metal door bucks are used, the double channel stud shall be wire-tied to bucks in a secure manner. Where wood bucks are used, two 8d nails shall be driven, in pairs, into the wood buck,

at intervals of 2 feet, beginning 9" above floor and the double channel studs securely wire-tied to the nails.

A horizontal reinforcing (½" to 1¼" flat iron or ¾" diameter rod) shall be attached 6" or 8" above top of door to the channel side and extend continuously past the double stud and just beyond the first single stud at each side. This reinforcement shall be saddle-tied to each vertical stud it crosses.

Also include GENERAL SPECIFICATIONS, B, C, AND D.

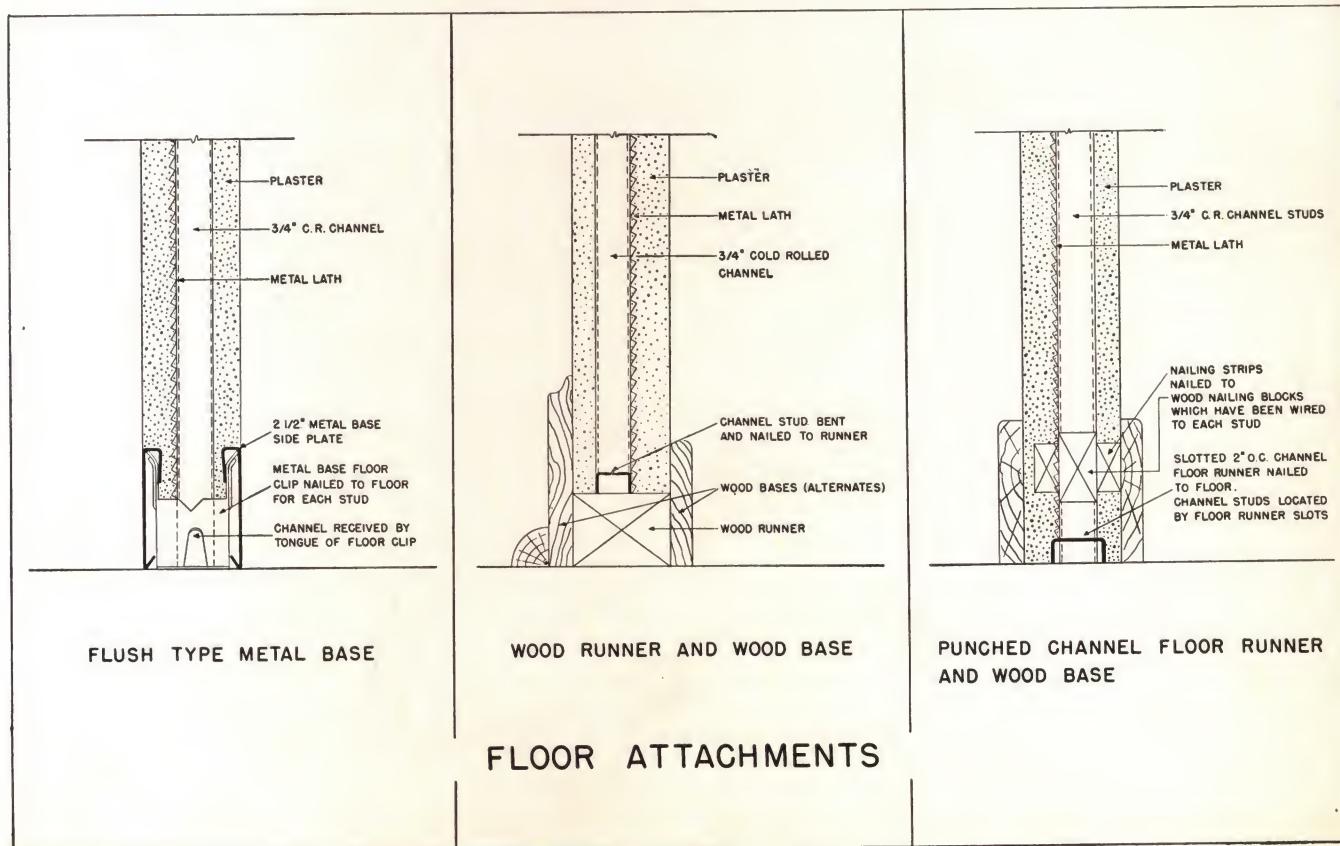
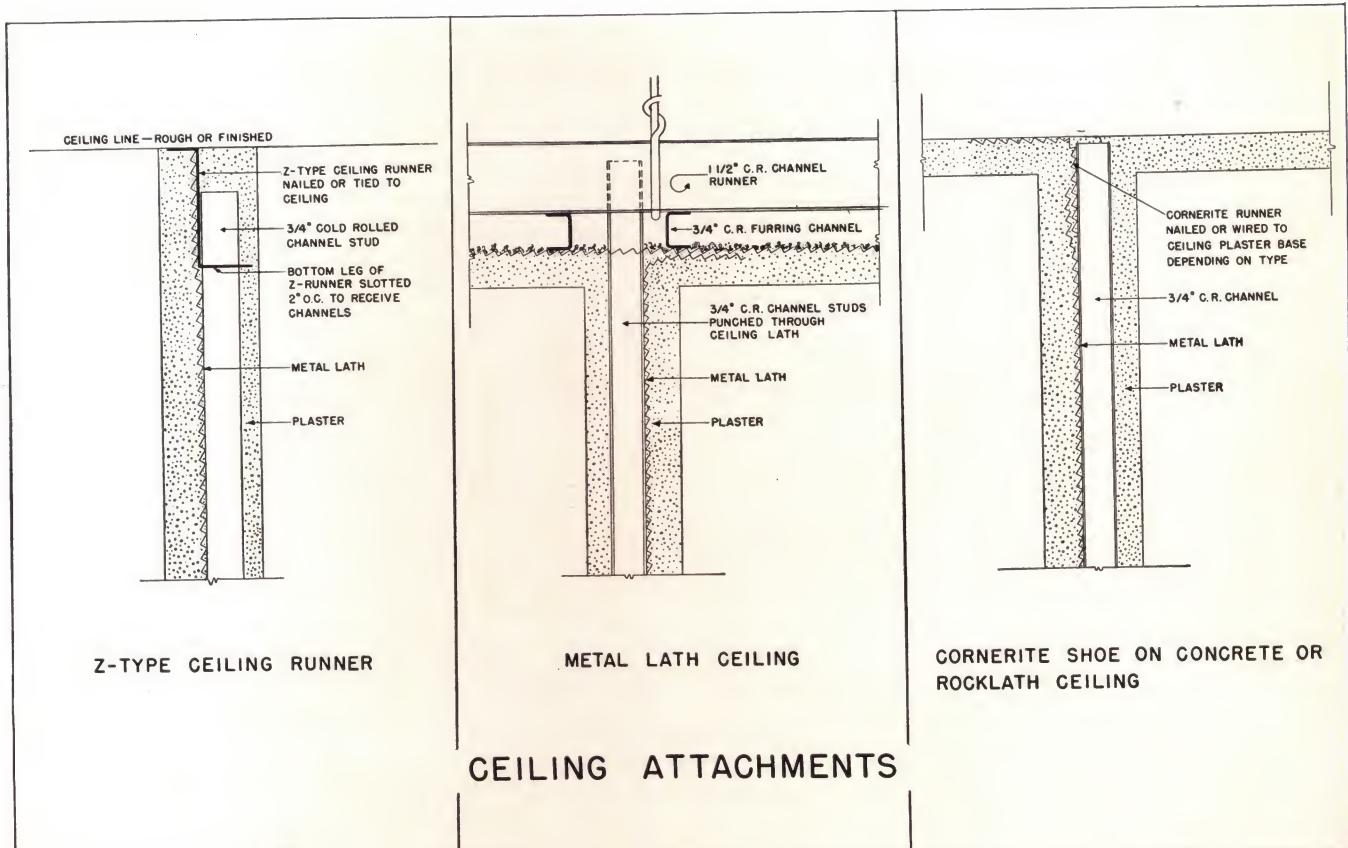
Lath sheets shall be secured to channel studs by a double strand of 18 gauge galvanized tie wire at 6" intervals.

PLASTERING (APPLICATION)

Plastering shall be of 5 coats to a total overall thickness of 2". First, scratch coat on lath side; allow to set and dry. Second, back-up coat on channel side applied to full grounds in not less than two operations. Third, brown coat on lath side. Fourth and fifth, finish coat on each side.

Temporary bracing of studs shall be furnished on the channel side of the partition and maintained until the scratch coat on the lath side has set.

2" SOLID METAL LATH AND PLASTER PARTITION



USG METAL BASE

FOR 2" SOLID LATH AND PLASTER PARTITIONS

DESCRIPTION

A metal base system for partitions or walls composed of floor clips or masonry wall clips and steel side plates 2½" high (18 or 20 gauge, primed with a rust inhibiting paint).

A friction-tension grip holds the side plates to the floor clips until the unit is grouted. The assembly of two side plates to one floor clip (double clip) provides a 2" wide base assembly for 2" solid plaster partition using either metal lath or ROCKLATH as the plaster base (page 11, this folder, describing 2" solid metal lath partition). The assembly of only one side plate to a single type clip provides a base unit for either a single faced partition or for wall furring. A base unit for masonry walls that are to be plastered, such as PYROBAR, * is provided by attaching the masonry wall clip to one piece of side plate and then nailing or tying through the clip into the masonry wall.

FUNCTION AND UTILITY

USG Metal Base is used to produce in one economical unit, a flush type steel base for partitions or other walls; a means of partition alignment; and a plaster ground.

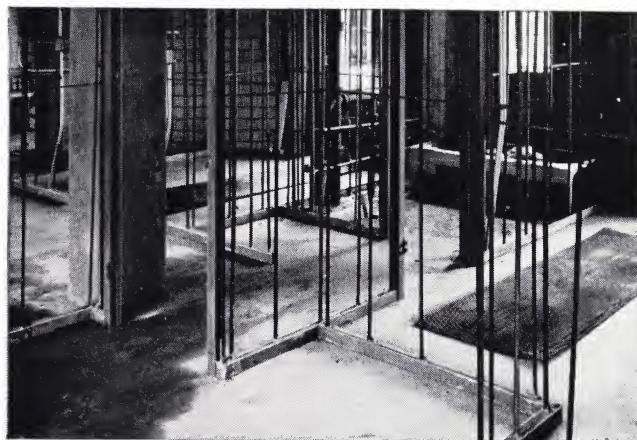
Its design permits installation on any type of rough or finished floor. The ears of the floor clips engage the top flange of the side plates, permitting the side plates to independently and automatically adjust to uneven and irregular floors.

The assembled metal base unit for 2" solid partitions must be solidly grouted with a plaster and sand grout. For 2" solid ROCKLATH and plaster partitions a V-shaped groove must be made in the grouted base unit before the grout hardens. This groove centers the ROCKLATH before plastering. For 2" solid metal lath and plaster partitions the base unit is grouted *after* the channel studs have been erected and *either before or after* the metal lath has been wired to the studs.

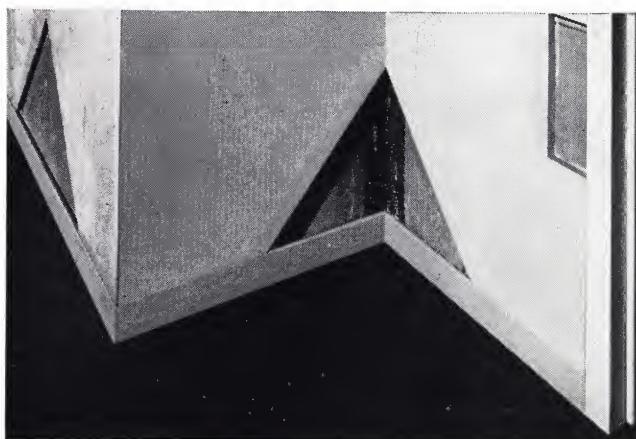
The side plates can be easily bent to form corners by notching the flanges. Side plates can be made continuous from one type of wall construction to another (e.g. From interior 2" solid partitions to exterior furred walls); ends of side plates are butted and internally spliced to make these continuous runs.

After the partition or wall has been plastered, the external faces of the side plates are exposed.

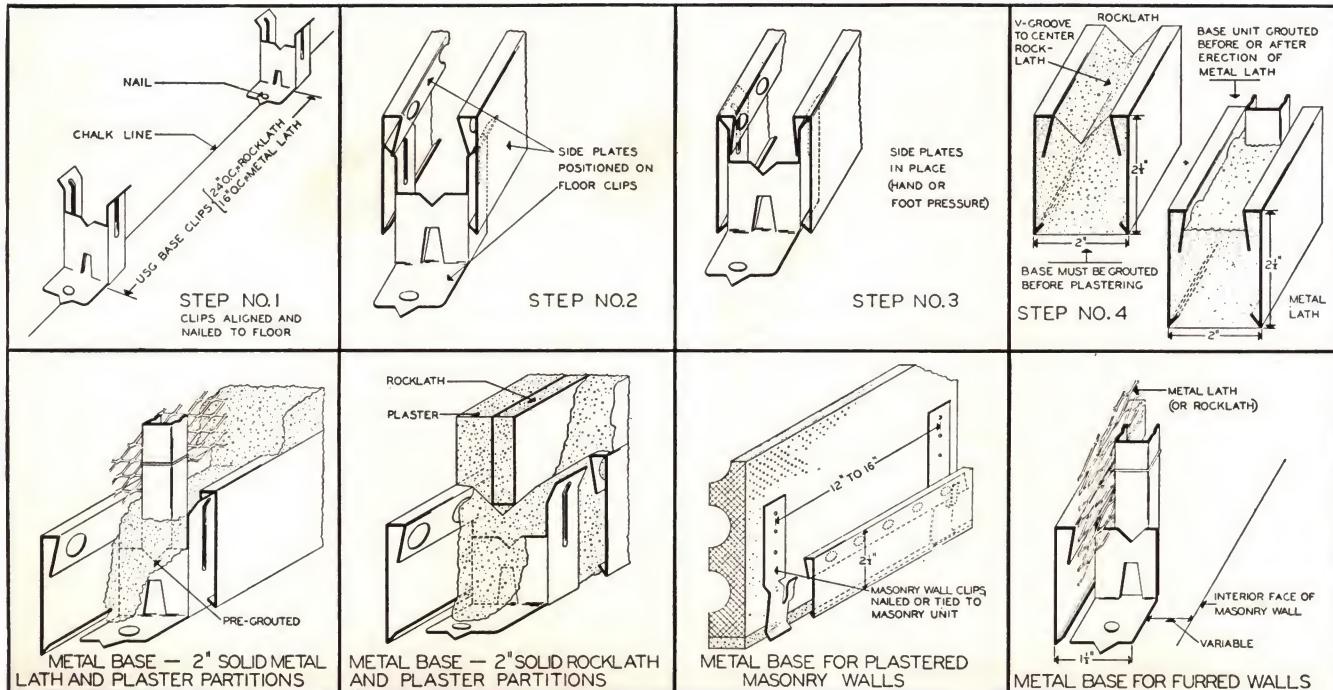
This type of base adds no combustible materials to the construction and affords protection to the base of the partition.



Channel Studs erected, USG metal base grouted; ready for metal lath and plaster.



Cut-aways show use of USG metal base in 2" Solid ROCKLATH and Plaster partition.



METAL LATH RESILIENT PLASTERING SYSTEM

DESCRIPTION

A system composed of metal lath, steel furring members and spring clips that provides a non-rigid or floating attachment of plastered surfaces to structural members.

FUNCTION AND UTILITY

1. Provides greatly increased protection against plaster cracking due to structural movement.
2. The system assures all the advantages of metal lath construction such as adequate grounds, flexibility and absence of streaking.
3. The resilient character of the clip provides a considerable reduction in the transmission of sound through walls or ceilings.
4. Adaptable to wood supports, suspended ceilings, hollow partitions and masonry or concrete surfaces.

SPECIFICATIONS

Scope

The USG Metal Lath Resilient System shall be provided where shown on plans or indicated in specifications.

Lathing Materials—Lathing materials shall be USG Metal Lath and USG cold rolled channels.

USG resilient clips shall be:

1. No. 100 for suspended ceilings, spacing of furring channels not to exceed 16" center to center.
2. No. 200 for wood joists; spaced 12" along joists and attached

with 4d common nails. Wire a $\frac{1}{4}$ " pencil rod to the inside of tongue on the clip.

3. No. 200 for wood studs; spaced 16" along studs, then follow procedure as for wood joists.

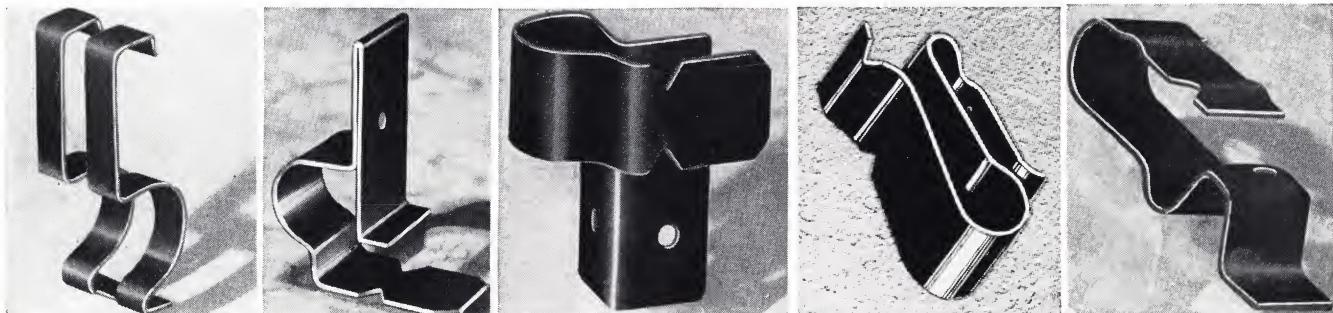
4. For wood furring strips where face nailing is required, proceed same as for wood studs, except substitute No. 300 Resilient Clip for No. 200. Do not use No. 300 for ceilings.

5. For use on TRUSSTEEL Studs use No. 400 Resilient Clips spaced 16" along stud. Wire a $\frac{1}{4}$ " pencil rod into the notch on the outside flange of the clip.

6. For masonry walls and concrete ceilings, use No. 500 Resilient Clip. Attach clip to gypsum tile with 2" staples. Attach to brick or clay tile with 10d cut nails. Attach to concrete ceiling with 9 gauge wire placed in position before concrete is poured, wire extending at least $1\frac{1}{2}$ " below concrete surface. Three-quarter-inch USG Cold Rolled Channels shall be wired to the inside of the tongues of the clips with the webs of the channels away from the lath.

Spacings of No. 500 Clips shall be as follows:

SPACING OF FURRING CHANNELS	SPACING OF No. 500 CLIPS
12"	24"
16"	18"
19"	15"
24"	12"



Resilient Clip No. 100

Resilient Clip No. 200

Resilient Clip No. 300

Resilient Clip No. 400

Resilient Clip No. 500



Figure 1

SUSPENDED CEILING. Showing application of No. 100 Clip for suspended ceiling construction. The clip provides resilient attachment of furring channel to runner channel by replacing use of the tie wire. Easy to erect.

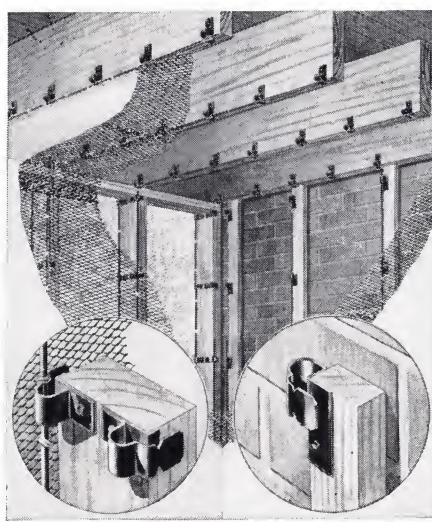


Figure 2

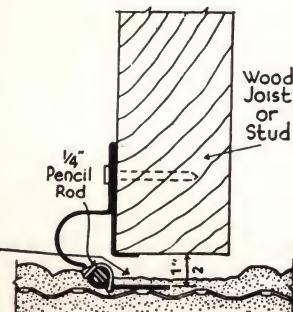
WOOD FRAME CONSTRUCTION. Showing application of No. 200 Clip on wood studs and joists and No. 300 Clip on wood furring on masonry walls. Clips provide resilient attachment of metal lath and protect plaster finish.



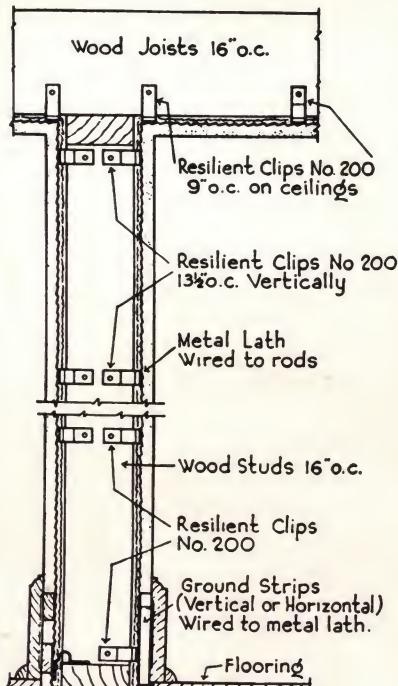
Figure 3

MASONRY SURFACES. Showing use of No. 500 Clip on ceiling under concrete joist and on masonry walls. Clip is also used on other masonry surfaces. Provides furring and resilient attachment of metal lath.

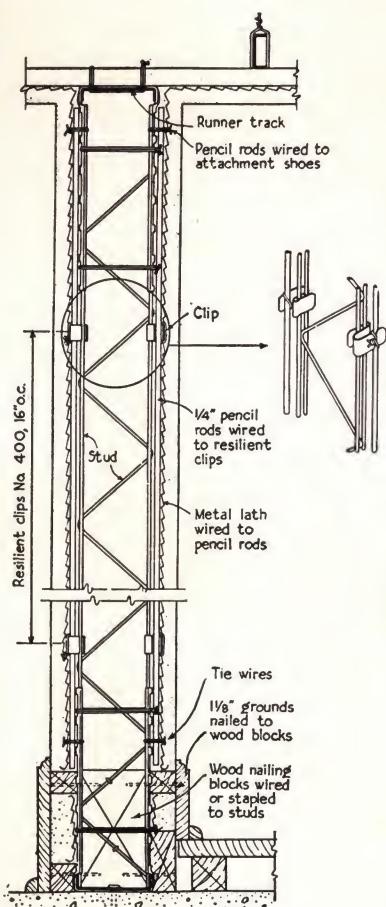
METAL LATH RESILIENT PLASTERING SYSTEM



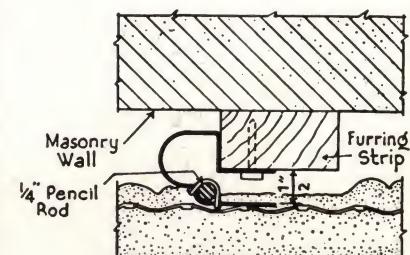
CLIP No. 200



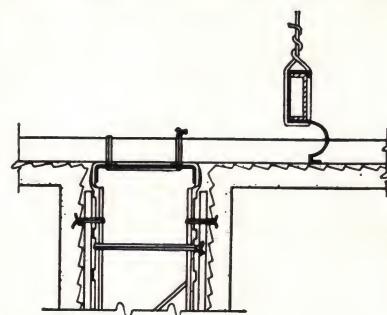
WOOD CONSTRUCTION



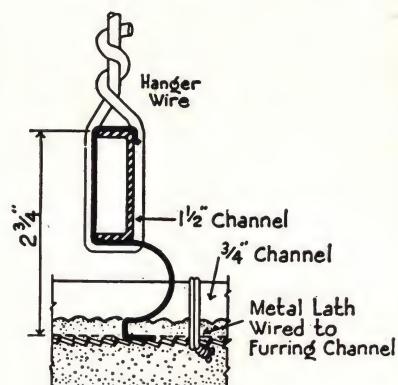
CLIP No. 400
TRUSSTEEL STUD PARTITION



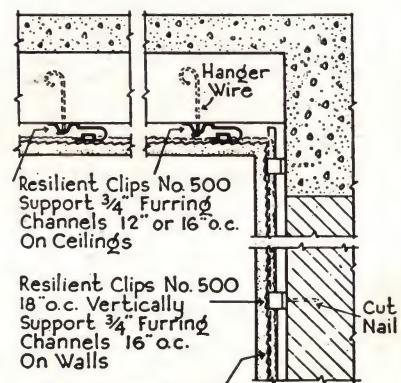
CLIP No. 300
For Wood Furring on
Masonry Construction



CLIP No. 500



CLIP No. 100
For Suspended Ceilings



MASONRY CONSTRUCTION

USG METAL LATH

3/8" AND 3/4" RIBLATH FOR CONCRETE SLAB REINFORCING

These heavy types of expanded metal lath are recommended for use as a combined form and reinforcing for light weight short span concrete slabs. The spacing of supports, the thickness of the slab and the safe load required will determine whether 3/8" or 3/4" Riblath shall be used. Consult data below.

LOADING TABLES FOR 3/8" RIBLATH

Thickness of Slab Above Mesh	Wt. of Concrete (Lbs. Per Sq. Ft.)	Wt. of Lath (Lbs. Per Sq. Yd.)	SAFE SUPERIMPOSED LOADS IN LBS. PER SQ. FT. (Based on WL/8 and 16,000 lbs. Fibre Stress in Steel)			
			12	16	19	24
2"	24	3.4	950	536	380	238
			4.0	1090	613	433
2 1/2"	30	3.4	1200	675	479	300
			4.0	1360	766	544
3"	36	3.4	1450	815	578	362
			4.0	1650	930	625

LOADING TABLES FOR 3/4" RIBLATH

Thickness of Slab Above Mesh	Wt. of Concrete (Lbs. Per Sq. Ft.)	Wt. of Slab* with 1/2" P. C. Plaster on Underside	Wt. of Lath (Lbs. Per Sq. Ft.)	Stress in Concrete (Lbs. Per Sq. In.)	Max. Span for Cent. Wet Concrete	SAFE SUPERIMPOSED LOADS IN LBS. PER SQ. FT. (Based on WL/10 and 16,000 lbs. Fibre Stress in Steel)			
						3	4	5	6
2"	24	30	.60	600	3' 3"	325	170	98	59
				.75	690	3' 7"	438	233	138
2 1/2"	30	36	.60	520	2' 11"	422	222	129	78
				.75	620	3' 3"	518	302	180
3"	36	42	.60	460	2' 8"		273	160	98
				.75	550	2' 11"	373	224	142
3 1/2"	42	48	.60	420	2' 5"		325	190	117
				.75	490	2' 9"	442	267	170
4"	48	54	.60	390	2' 3"		378	222	138
				.75	460	2' 6"	514	310	198

*To improve appearance, and to further enhance the strength of the slab, 1/2" of Portland Cement Plaster may be used on the underside of the lath.

SPECIFICATIONS

Metal lath for concrete reinforcing over steel beams shall be USG (3/8") (3/4") Riblath as supplied by United States Gypsum Company.

Riblath sheets shall be placed over and across the steel supports with the rib upward. Edge ribs of adjacent sheets shall be lapped and ends occurring over beams lapped at least one inch. Lath sheets shall be attached to flange of beam with special wire attachment clips, or other approved devices.

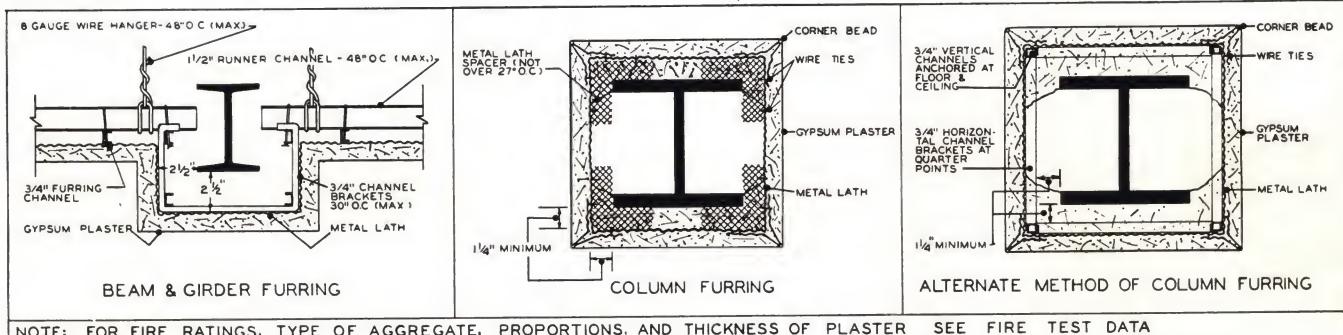
BEAM AND COLUMN FIREPROOFING SPECIFICATIONS

Metal lath shall be of 2.5 lb. Colorite Diamond Mesh lath, manufactured by United States Gypsum Company.

Framework to the contour and size shown on drawings shall be constructed of 3/4" cold rolled channels, as approved by the architect. In no case shall the spacing of any steel bracket member exceed 12 inches unless they are cross-furred with 3/4" channels, in which case brackets shall not exceed 30" o.c.

Wire tieing of brackets to 1 1/2" channels or structural members shall be of not less than 14 gauge galvanized wire, using saddle tie, or of 6 strands of 18 gauge galvanized tie wire.

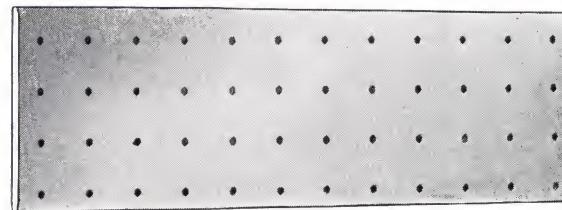
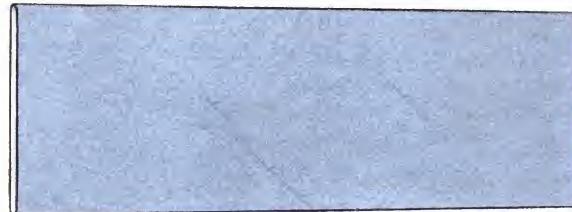
Diamond Mesh metal lath shall be shaped to approximate contour and attached to the framework with 18 gauge galvanized tie wire at 6" intervals, and at closer intervals where necessary to hold the lath in place.



TECHNICAL INFORMATION

ROCKLATH

T. M. REG. U. S. PAT. OFF.

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Rev. 11 - 1949

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PLAIN AND PERFORATED ROCKLATH*

PLAIN ROCKLATH

DESCRIPTION

Plain ROCKLATH plaster base is a gypsum lath made in sheet form. A fibered gypsum core is faced on the sides and long edges with paper especially manufactured for this purpose. Complies with ASTM Designation C37-42 and Federal Specifications SS-P-431a.

Sizes—16 x 48 inches, $\frac{3}{8}$ or $\frac{1}{2}$ inch thick (Also made 16 $\frac{1}{2}$ inches wide for Pacific Coast areas).

FUNCTION AND UTILITY

FIREPROOF—ROCKLATH plaster base has an incombustible gypsum core, and will not burn or transmit temperatures much in excess of 212° F. until completely calcined. Refer to technical data on page 3.

RESISTANCE TO SOUND TRANSMISSION—B.M.S. report No. 17 of the National Bureau of Standards assigns a sound transmission loss rating of 41.1 decibels to a wood stud partition with gypsum lath and plaster both sides. See technical data under Resilient ROCKLATH System page 8 for higher ratings.

STRENGTH OF BOND—Gypsum plaster adheres tightly to ROCKLATH with an extremely strong bond. A pull of 864 pounds per square foot is required to separate gypsum plaster from gypsum lath, a factor of safety of 144.

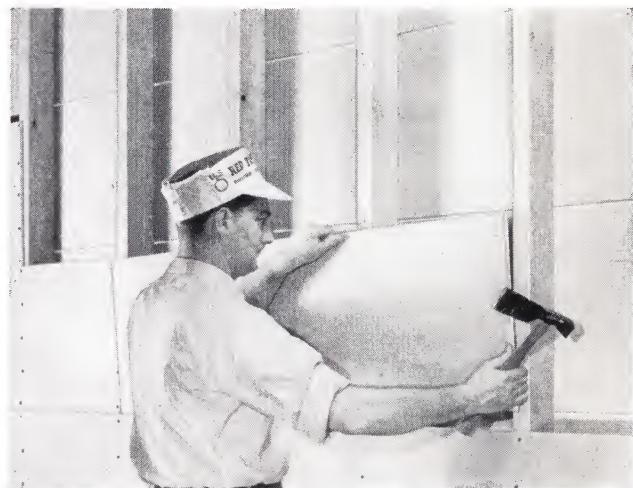
STRUCTURAL STRENGTH—The large sheets add appreciable resistance to lateral distortion of the frame. When plastered to standard $\frac{7}{8}$ " grounds, the construction offers high transverse strength between framing members.

PERFORMANCE—Gypsum is a mineral, not affected by time, decay, dry rot, or humidity conditions; does not attract vermin.

LOW IN COST—The low cost of ROCKLATH, its outstanding performance, its ease and speed of erection, as well as the savings in plastering it permits, have made this plaster base the standard of excellence throughout the country.

LIMITATIONS OF USE

1. ROCKLATH, $\frac{3}{8}$ " thick, is designed for supports not to exceed 16" on centers. For centerings greater than 16" and not more than 24", $\frac{1}{2}$ " thickness of ROCKLATH should be used.
2. Plaster with three coats only with $\frac{1}{2}$ " ROCKLATH on supports over 16" O.C.
3. For use with gypsum plaster only. Bond between lime or portland cement plaster and ROCKLATH is inadequate.
4. Gypsum lath and plaster, painted with 3 coats of lead and oil, has a vapor permeability of about $3\frac{3}{4}$ grains of water per square foot per hour per inch of mercury vapor pressure difference. For higher resistance to vapor transmission, use Insulating ROCKLATH plaster base described on page 4.



5. ROCKLATH plaster base should not be used where exposed to excessive moisture or humidity. Use galvanized metal lath (or galvanized metal fabric), and portland cement plaster.
6. Where one hour fire resistive ratings are required, Perforated ROCKLATH should be used. See next section on Perforated ROCKLATH and technical data chart on page 3.

SPECIFICATIONS

For Nail-on Construction

SCOPE: Unless otherwise indicated, all exterior walls, all interior stud partitions and all ceilings are included. (For clip attachment specifications, see pages 8, 10 and 11.)

MATERIALS: Gypsum lath shall be (plain) (perforated) ROCKLATH, $\frac{3}{8}$ " ($\frac{1}{2}$ ") thick x 16" x 48", manufactured by the United States Gypsum Company.

Accessories, including Cornerite and corner bead, shall be manufactured by the United States Gypsum Company.

Nails shall be $1\frac{1}{8}$ ", 13 gauge, blued, $1\frac{1}{64}$ " flat head, smooth diamond point (for $\frac{1}{2}$ " lath, specify $1\frac{1}{4}$ " length and for one hour fire resistance rating, specify $\frac{3}{8}$ " flat head).

APPLICATION: ROCKLATH plaster base shall be applied face out with the long dimension at right angles to the framing members. On walls, the end joints, shall be made to fall on different supports in alternate courses. On ceilings, end joints shall be staggered as for side walls, or the ROCKLATH shall be erected so that the end joints are made continuous on a support, in which case the end joints shall be covered with 3-inch striplath and the long or edge joint shall be offset or staggered. In all cases, ROCKLATH joints shall be butted together. Space nails approximately $\frac{3}{8}$ " from the edges and approximately 5 inches apart, using four nails per lath per support. (For one hour fire resistance rating, or $\frac{1}{2}$ " ROCKLATH with supports more than 16" o.c., nails must be spaced approximately 4 inches apart using 5 nails per lath per support.) Cut accurately and fit ROCKLATH neatly around all electrical outlets, etc. All re-entrant angles shall be reinforced over the ROCKLATH with cornerite. Cornerite shall be fastened only sufficiently to retain position until secured by the plaster. Corner bead shall be applied to all exterior angles by nailing through to the framing.

"ROCKLATH", "BRIDJOINT" and "RED TOP" mentioned in this publication are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "ROCKLATH" identifies the particular gypsum lath or plaster base; "BRIDJOINT" identifies metallic clips for use in attaching building boards and lath; "RED TOP" identifies the particular gypsum cement plaster; all manufactured only by United States Gypsum.

PLAIN AND PERFORATED ROCKLATH

PERFORATED ROCKLATH

DESCRIPTION

Perforated ROCKLATH plaster base is identical in all respects with plain ROCKLATH except $\frac{3}{4}$ -inch round holes are punched through the lath 4 inches on center in each direction (one $\frac{3}{4}$ -inch diameter hole for each 16 square inches of lath area).

Sizes—16 x 48 inches, $\frac{3}{8}$ and $\frac{1}{2}$ inch thick. (Also made 16 $\frac{1}{8}$ inches wide for Pacific Coast area.)

FUNCTION AND UTILITY

FIREPROOF—Perforated ROCKLATH plaster base is especially useful where one hour fire resistive ratings are required. Gypsum plaster applied over perforated ROCKLATH, in addition to being "welded" to the surface, mushrooms through the holes "riveting" the plaster to the lath. This added bond gives the higher fire rating of perforated ROCKLATH and plaster. See technical data below.

LOW IN COST—Perforated ROCKLATH plaster base requires approximately 20 per cent less plaster than other key type laths, yet retains all the economies listed under plain ROCKLATH.

SAFEGUARD—The holes in perforated ROCKLATH plaster base encourage application of proper thickness of plaster. Perforated ROCKLATH is equal to plain ROCKLATH with respect to:



1. Resistance to sound transmission.
2. Structural strength.
3. Durability.
4. Compliance with A.S.T.M. and Federal Specifications.

LIMITATIONS OF USE

Same as for plain ROCKLATH plaster base except perforated ROCKLATH should not be used on ceilings with Resilient ROCKLATH Clips or similar suspension systems. For further details on this system, see page 6.

TECHNICAL DATA

PARTITIONS

Construction	Total Weight Lbs. per Sq. Ft. Lath and Plaster Only	Plaster & Aggregate	Thickness	Fire Rating Reference	Sound Transmission Loss & Reference
$\frac{3}{8}$ " Plain ROCKLATH, nail-on 2"x4" studs.	12	Gypsum-Sand 1:2—1:2	$\frac{1}{2}$ "	45 min. (1)	41.1 (1)
$\frac{3}{8}$ " Plain ROCKLATH nail-on, 2"x 4" studs.	11	Wood fiber plaster.	$\frac{1}{2}$ "	1 hr. (1)	41.1 (2)
$\frac{3}{8}$ " Perforated ROCKLATH nail-on, 2"x4" studs.	12	Gypsum-Sand 1:2—1:2	$\frac{1}{2}$ "	1 hr.	41.1 (2)

CEILINGS

$\frac{3}{8}$ " Perforated ROCKLATH nailed to 2"x10" wood joists with 5/16" headed nails. $\frac{3}{4}$ " sub floor—diaphragm of asbestos paper —T & G finished floor.	6.0	Gypsum-Sand 1:2—1:2	$\frac{1}{2}$ "	30 min. (1)	
Same as above except nails had $\frac{3}{8}$ " head.	6.0	Gypsum-Sand 1:2—1:2	$\frac{1}{2}$ "	45 min. (1)	
$\frac{3}{8}$ " Perforated ROCKLATH nailed to 2"x10" wood joists with $\frac{3}{8}$ " headed nails. Striplath applied to joists with $\frac{3}{4}$ " nails having $\frac{1}{2}$ " head.	6.0	Gypsum-Sand 1:2—1:2	$\frac{1}{2}$ "	1 hr. (1)	

(1) National Bureau of Standards

(2) Estimated to be same as plain ROCKLATH with sanded plaster.

INSULATING ROCKLATH

DESCRIPTION

Insulating ROCKLATH plaster base is manufactured by attaching a sheet of bright aluminum foil to the back of plain ROCKLATH.

Sizes—The same as plain ROCKLATH.

FUNCTION AND UTILITY

A fireproof gypsum lath with all of the advantages of plain ROCKLATH described on page 2 plus:

VAPOR BARRIER—Aluminum foil is one of the best vapor barriers known and used commercially. Its use on the back side of ROCKLATH applied to all exterior walls and top floor ceilings will effectively safeguard against harmful condensation in the stud or joist spaces. See technical data below.

INSULATION—When properly installed with at least a $\frac{3}{4}$ inch air space next to the foil, insulating ROCKLATH plaster base has the same insulating value as a full half inch of fibre insulating board. *When used on horizontal surfaces, its insulating value is increased three times in retarding downward flow of heat.* See thermal resistance chart.

EFFECT OF CORROSION AND DUST—Repeated tests and field observations over an extended number of years show that, in normal use, there is insufficient corrosion to harm the insulating and vapor characteristics of insulating ROCKLATH. Tests over a period of years prove that the effect of dust on insulating ROCK-

LATH in a vertical position is negligible, and that a normal dust deposit accumulating on insulating ROCKLATH in a horizontal position will not reduce its insulation efficiency to any practical degree.

EXCELLENT FOR SOLID MASONRY—In a masonry wall of conventional construction with furring strips, there is insufficient space for most types of insulation. With insulating ROCKLATH, positive insulation and vapor barrier of proved value is provided.

COST—Costs for application of insulating ROCKLATH plaster base are no more than for plain or perforated ROCKLATH. Material costs average approximately $1\frac{1}{2}$ cents per square foot more than plain or perforated ROCKLATH.

LIMITATIONS OF USE

The same as plain ROCKLATH plaster base except that insulation and an adequate vapor barrier are provided.

SPECIFICATIONS

Use specifications given for plain or perforated ROCKLATH plaster base, adding the following paragraph:

MATERIALS:

Gypsum lath for exterior walls and top floor ceilings shall be Insulating ROCKLATH plaster base $\frac{3}{8}$ " ($\frac{1}{2}$)" x 16" x 48", manufactured by the United States Gypsum Company.

INSULATION QUALITIES

The thermal resistance figures and "U" factors shown in the charts below emphasize the insulation qualities of Insulating ROCKLATH. Note particularly the high thermal resistance of Insulating ROCKLATH against downward heat flow (summer heat).

THERMAL RESISTANCE (R) OF INSULATING ROCKLATH ($\frac{1}{2}$ " OF PLASTER AND FACING AIR SPACE $\frac{3}{4}$ " OR MORE) ALL FIGURES BASED ON 1949 GUIDE ASHVE		
Direction of Heat Flow	Thickness of Insulating ROCKLATH	
	$\frac{3}{8}$ "	$\frac{1}{2}$ "
Downward Use these coefficients for ceiling and sloping surfaces under summer conditions.	6.93	7.01
Upward Use these coefficients for ceiling and sloping surfaces under winter conditions.	2.59	2.67
Horizontal Use these coefficients for walls under summer or winter conditions.	2.59	2.67

Comparative "U" Factors of Exterior Walls		
Exterior Finish and Type of Sheathing	Interior Finish	
	$\frac{3}{8}$ " ROCKLATH and $\frac{1}{2}$ " Plaster	$\frac{3}{8}$ " Insulating ROCKLATH and $\frac{1}{2}$ " Plaster
8" Common Brick—with $\frac{3}{4}$ " Furring Space	.27	.21
Wood Siding—with $\frac{1}{2}$ " USG Gypsum Sheathing	.31	.22
Brick Veneer [†] —with $\frac{1}{2}$ " USG Gypsum Sheathing	.34	.24
Stucco—with $\frac{1}{2}$ " USG Gypsum Sheathing	.39	.26
Wood Shingles—with $\frac{1}{2}$ " USG Gypsum Sheathing	.31	.22
Asbestos Shingles—with $\frac{1}{2}$ " USG Gypsum Sheathing	.28	.21

NOTES: [†]Indicates furring used for attachment of shingles.
Value of second air space is included in calculations.
[†]Second air space with brick veneer not considered in calculations.

INSULATING ROCKLATH

VAPOR BARRIERS

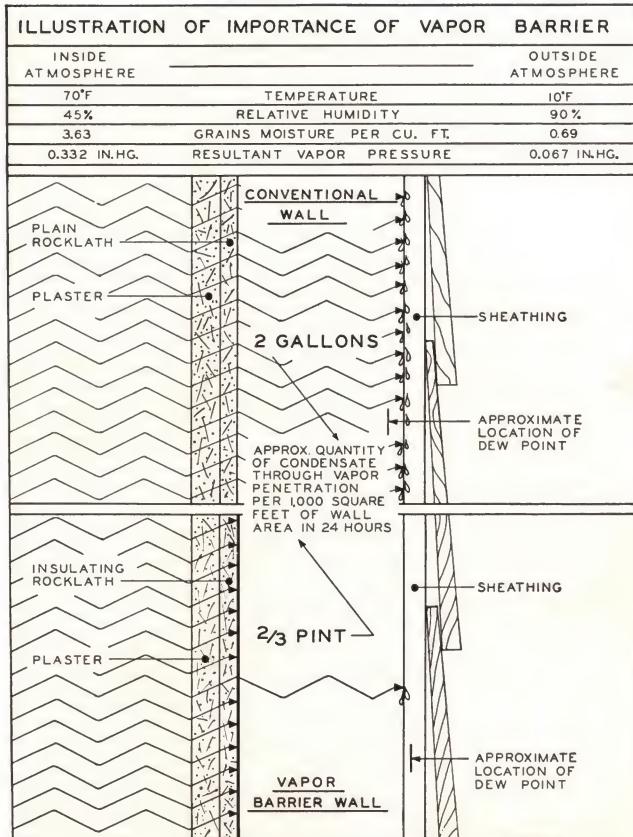
When the atmospheric conditions indicated in the accompanying chart are of considerable duration, the amount of condensation in the "Conventional Wall" is sufficient to damage the interior decoration, exterior paint, or any of the other wall components. In the "Vapor Barrier Wall," however, the quantity of condensate is so minor as to be readily dissipated.

RECOMMENDATIONS

1. An efficient vapor barrier should be installed in all exterior walls and ceilings in locations where below freezing weather occurs for extended periods of time.
2. Vapor barrier should be located on the warm side of the exterior wall or top floor ceiling.
3. Vapor barrier should have a vapor permeability of not more than 1.00 grain per square foot, per hour, per pound, per inch of mercury vapor pressure difference.

TECHNICAL DATA

Tests at a nationally recognized testing laboratory (name on request) give a vapor permeability for Insulating ROCKLATH applied to wood studs in the normal manner with $\frac{1}{2}$ inch gypsum plaster of 0.67 grains per square foot per hour, per inch of mercury vapor pressure difference. Permeabilities of other materials are shown in the table at the right:



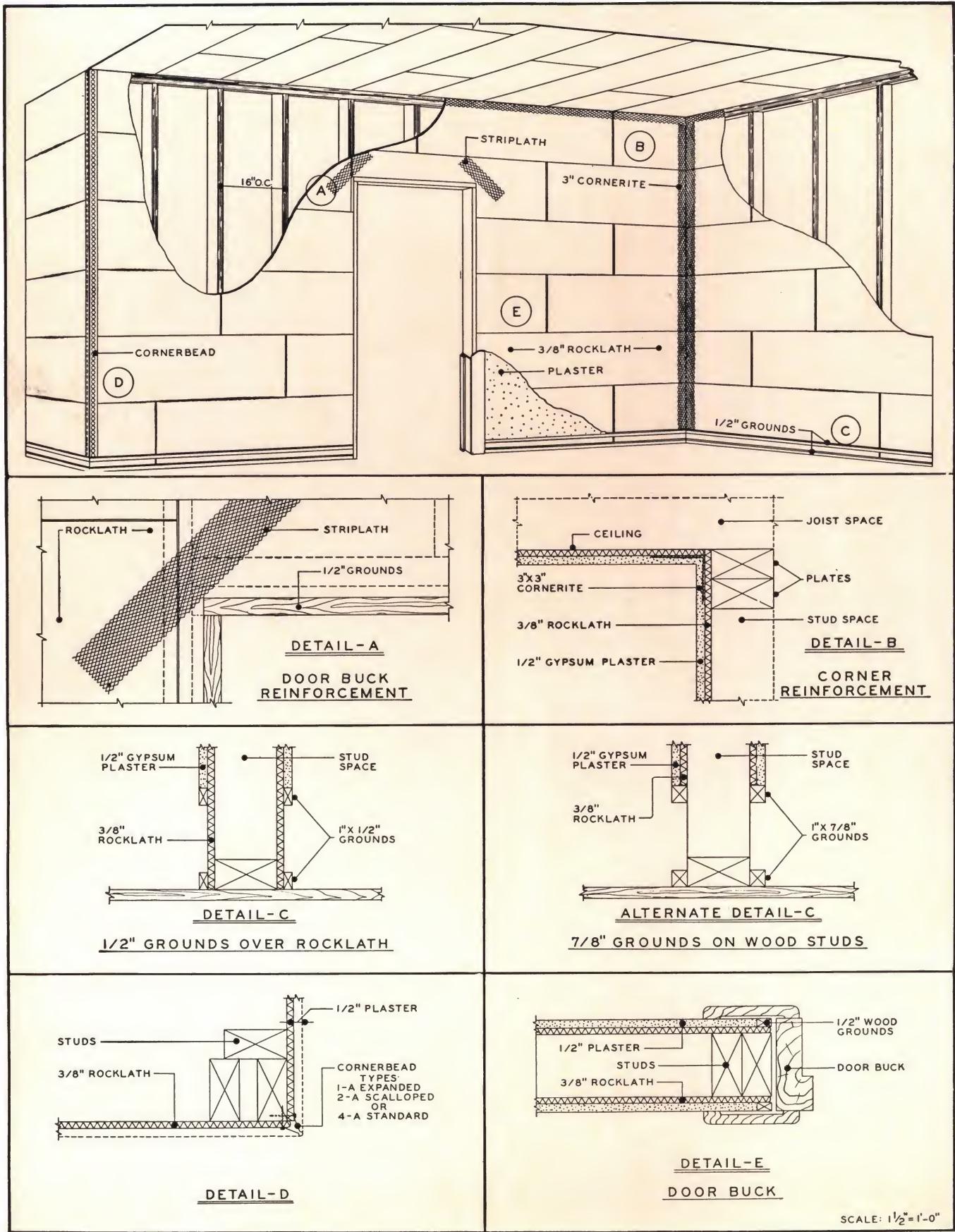
Comparative Vapor Permeability of Exterior Wall Materials

Permeability in Grains Per Sq. Ft. Per Hr. Per Inch Mercury

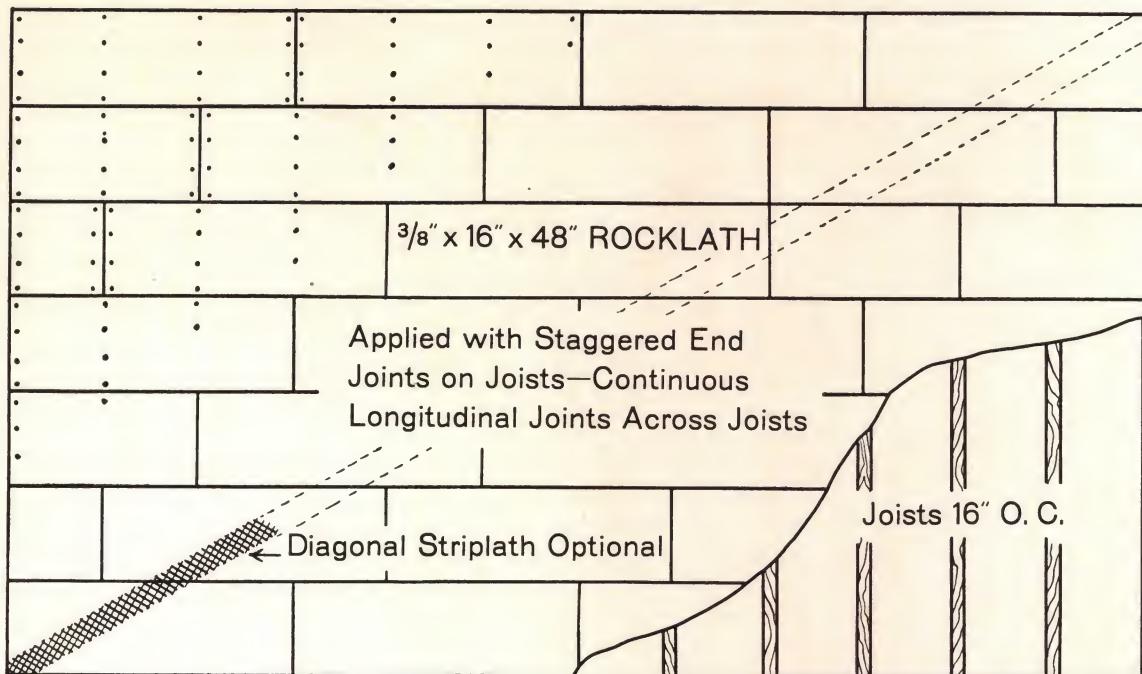
Duplex Papers515	to	2.56
Insulation Back-up Paper86	to	3.4
Fir Sheathing			2.94
$\frac{1}{2}$ " Plywood	2.66	to	3.35
Paint Film			3.43
Plaster with 3 coats lead and oil paint ..	3.18	to	3.84
Pine lap siding			4.90
Slater's Felt	5.15	to	25.6
Plaster on wood fiber board or plain gypsum lath	11.0	to	20.5
Fiber board sheathing	25.7	to	34.2
Still air			34.7

For other permeability ratings see BMS-63—Bureau of Standards

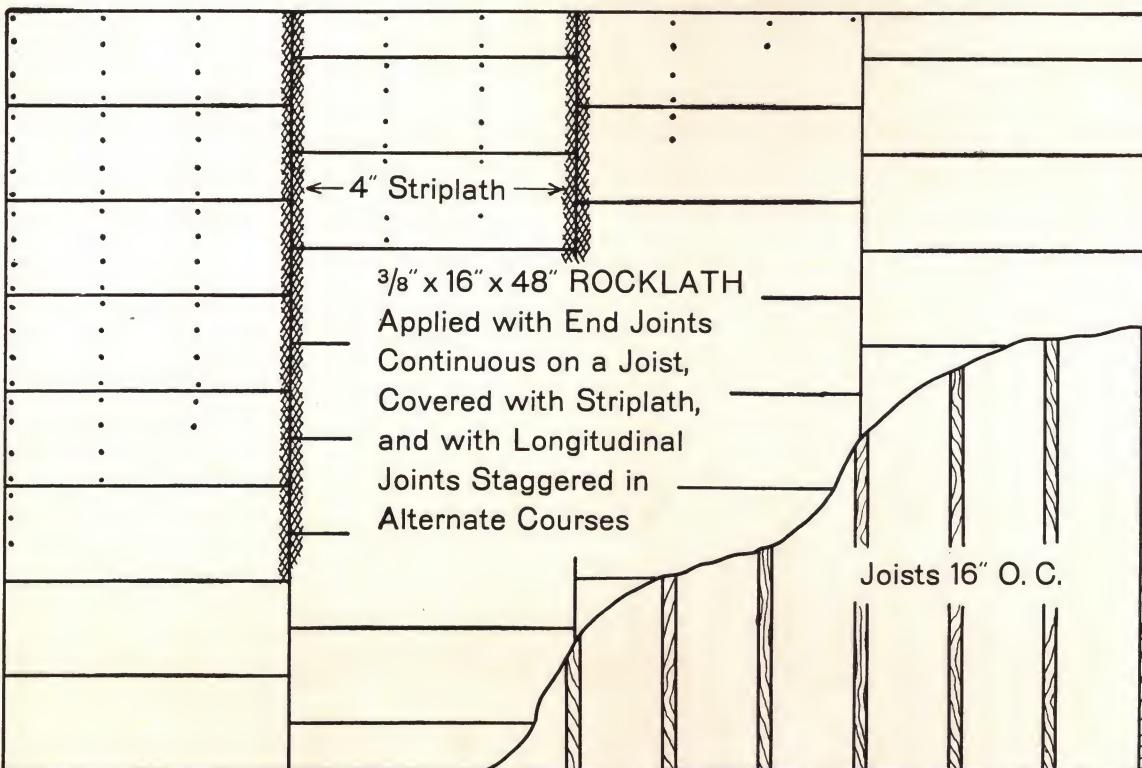
ROCKLATH PLASTER BASES – Details



ROCKLATH PLASTER BASES—Details (Cont.)



CEILING APPLICATION—ALTERNATE METHODS



RESILIENT LATHING SYSTEM

DESCRIPTION

Resilient lathing system is a method for the attachment of ROCKLATH plaster base, floating it free from the framing, basic wall or ceiling construction by means of resilient spring clips.

FUNCTION AND UTILITY

EXCELLENT RESISTANCE TO SOUND TRANSMISSION—The National Bureau of Standards assigns a sound transmission loss rating of 52.2 decibels to a wood stud partition with R-1 resilient clips, gypsum lath and plaster both sides.

MAXIMUM CRACK RESISTANCE—Spring clips permit limited movement of framing members, their resilience reducing the strain on the plaster coat.

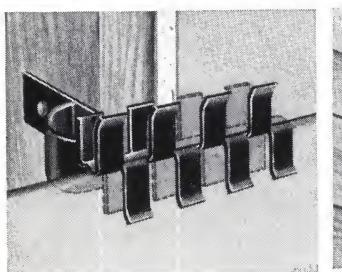
FIREPROOF—Tests at a nationally recognized fire testing laboratory (name on request) give a 58½ minute fire resistance to a wood stud partition with Perforated ROCKLATH attached with R-1 Resilient Clips each side (plastered to $\frac{1}{2}$ " over the lath with gypsum-sanded 1:2, 1:2).

FLEXIBLE—May be applied to wood, steel or masonry construction.

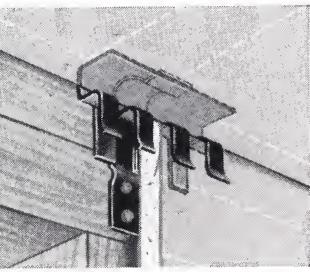
COST—The increase in cost is only nominal and represents principally the additional cost of clips over nail-on system of application.

LIMITATIONS OF USE

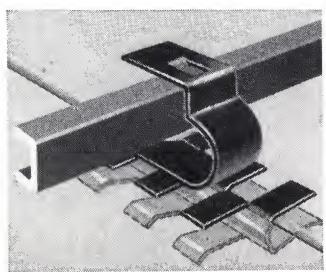
1. The same as for plain ROCKLATH plaster base.
2. Use either plain or perforated ROCKLATH for side wall construction.
3. Perforated ROCKLATH should not be used on ceilings with resilient ROCKLATH clips. Use plain ROCKLATH plaster base with a full scratch coat, raked and *allowed to set*, followed by a brown coat to a total thickness of $\frac{7}{16}$ " over the lath.



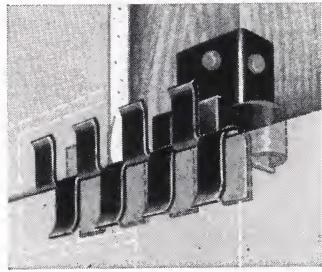
R-1 Clip



R-2 Clip



R-3 Clip



R-4 Clip

SPECIFICATIONS

(Include the following paragraph in the basic ROCKLATH plaster base specifications.)

SCOPE:

Designated areas shall be lathed and plastered with United States Gypsum Company ROCKLATH resilient system.

CARPENTRY WORK

(For inclusion in the carpentry specifications.) Grounds for resilient lathing system shall be $1\frac{1}{4}$ ". Furnish bucks of sizes detailed at all door openings.

MATERIALS

Lath shall be (plain) (perforated) (insulating) $\frac{3}{8}$ " x 16" x 48" ROCKLATH plaster base, made by the United States Gypsum Company. Clips for the attachment shall be USG Resilient ROCKLATH Clips of the type required, made and recommended by the United States Gypsum Company. Corner beads shall be (1-A expanded) (4-A standard) manufactured by United States Gypsum Company.

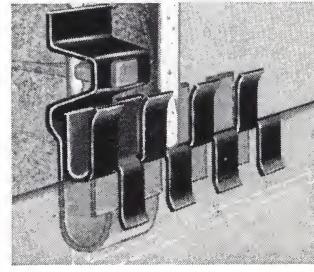
APPLICATION

ROCKLATH plaster base shall be applied face out with the long dimension at right angles to the framing members with staggered end joints. Where practical, stagger joints between walls and ceilings so that vertical joints on the wall will not meet ceiling joints. All ROCKLATH corners shall occur over framing members and be secured with clips. Also, a clip shall be placed at every intersection of ROCKLATH edges and framing members. ROCKLATH shall be attached to the framing members by means of USG ROCKLATH resilient clips spaced 16" on centers in both directions. Attachment clips shall be as follows:

- R-1—For wood stud or joist framing
- R-2—Corners and angles, wood frame construction.
- R-3— $\frac{3}{4}$ " channels, ceilings only
- R-4—Wood furring, walls only
- R-5—Solid masonry construction.

(See illustrations at the bottom of the page)

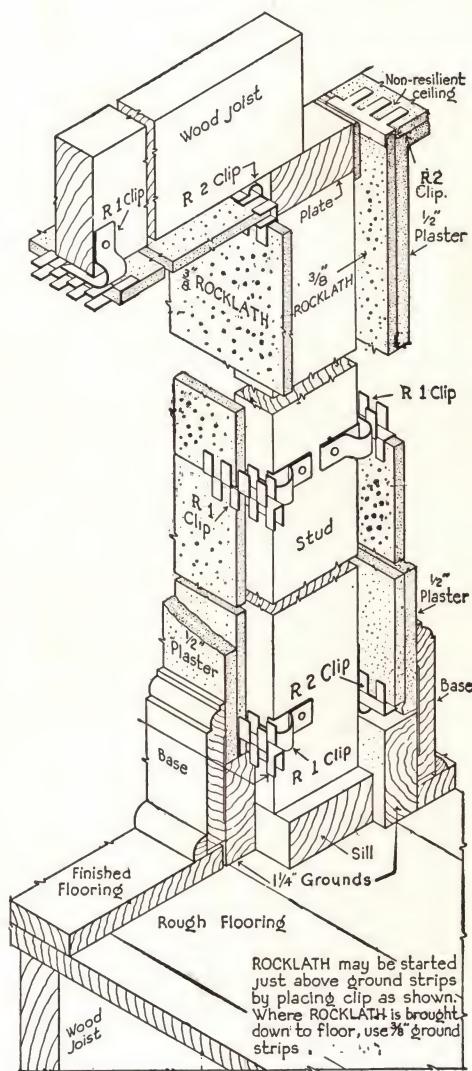
All corner beads shall be attached to ROCKLATH plaster base with staples or tie wire. Under no circumstances shall ROCKLATH or accessories be attached to the framing. (See construction details opposite page.)



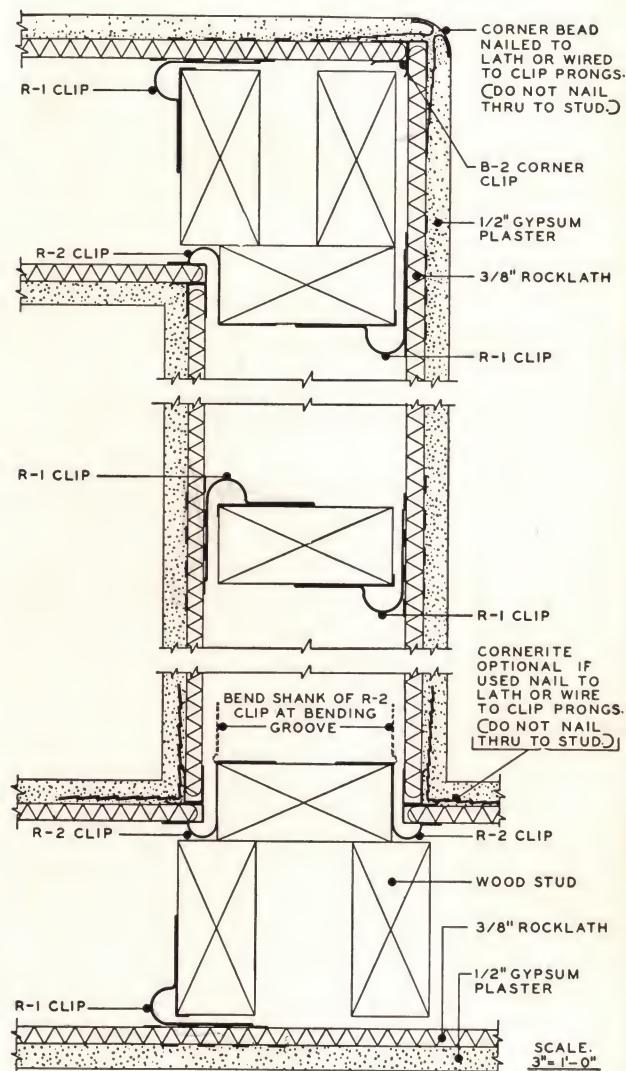
R-5 Clip

ROCKLATH RESILIENT LATHING SYSTEM

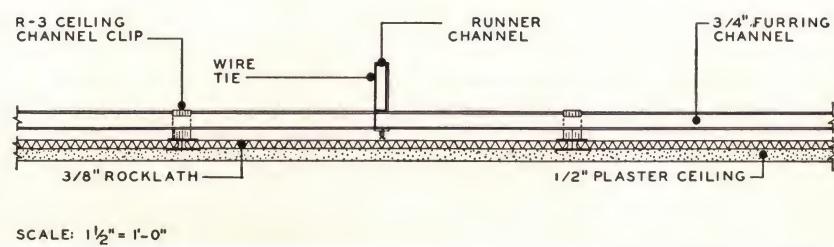
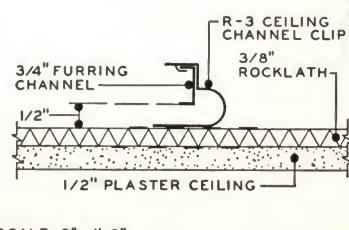
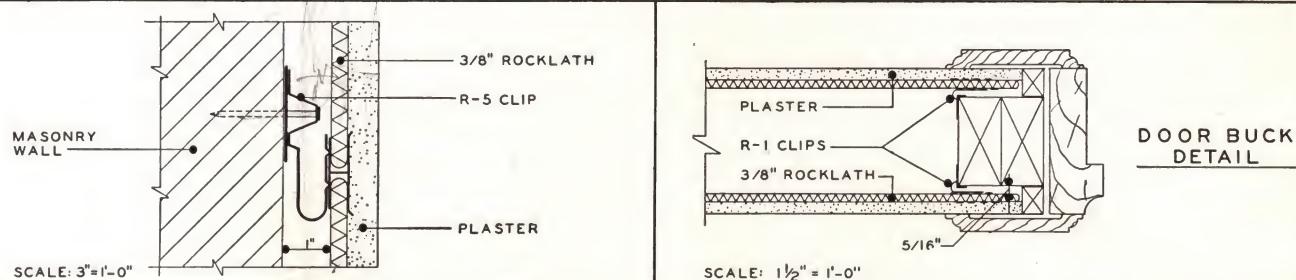
WALL AND CEILING



WALL CORNER CONSTRUCTION



DOOR BUCK DETAIL



BRIDJOINT* LATHING SYSTEM

DESCRIPTION

The BRIDJOINT Lathing System is a clip application of ROCKLATH plaster base on walls and ceilings so designed that the ends (16" dimension) of the lath fall between (not on) framing members.

Types B-1 and B-2 clips for $\frac{3}{8}$ " ROCKLATH.
B-1 for $\frac{1}{2}$ " ROCKLATH.

FUNCTION AND UTILITY

RESISTANCE TO CRACKING—Removal of gypsum lath ends from framing members increases resistance to cracking at the most vulnerable points.

FRAMING MEMBERS need not be exactly 16" on centers, as the ends of the lath may occur at random except at corners.

ADAPTABLE OVER NAILABLE STEEL FRAMING if framing members are spaced not more than 24" on center, and provided that $\frac{1}{2}$ " thick, ROCKLATH is used in lieu of $\frac{3}{8}$ ". Nails of not less than $\frac{3}{8}$ " head shall be used and must be of sufficient length to extend beyond the nail retention curve of the member, or of special design to lock in member as recommended by manufacturers of the framing.

COST—Twenty-five per cent less nailing of the lath is required. Cornerite and nailing are eliminated in corners, making for speed and economy. This results in only a slight increase over the cost of nail-on construction.

LIMITATIONS OF USE

Same as for plain ROCKLATH, see page 2.

SPECIFICATIONS

SCOPE:

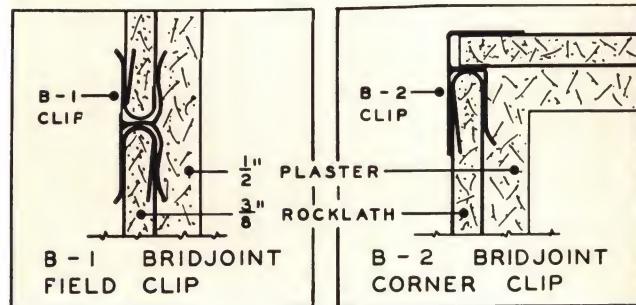
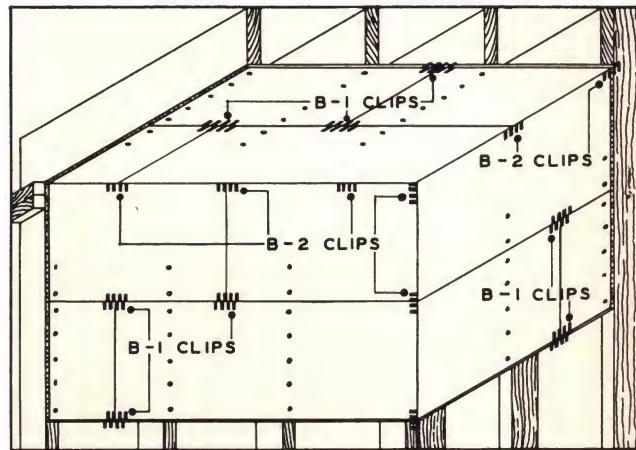
Designated areas are to be lathed with United States Gypsum Company's BRIDJOINT Lathing System. Grounds shall be $\frac{7}{8}$ ".

MATERIAL:

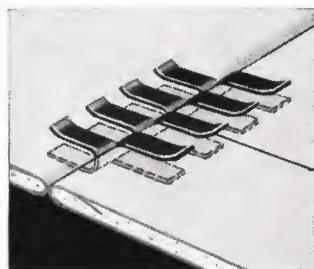
Lath shall be (plain) (perforated) (insulating) $\frac{3}{8}$ " ($\frac{1}{2}$ ") x 16" x 48" ROCKLATH, made by the United States Gypsum Company. Clips for attachment shall be BRIDJOINT clips, manufactured by the United States Gypsum Company. Corner beads shall be manufactured by United States Gypsum Company. Nails shall be $1\frac{1}{8}$ " ($1\frac{1}{4}$ " for $\frac{1}{2}$ " lath) by 13 gauge, blued, $19/64$ " flat head, smooth diamond point. (See above for nailable steel framing.)

APPLICATION:

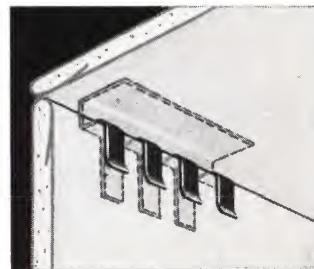
ROCKLATH shall be applied with the long dimensions at right angles to the framing members with staggered



Details of BRIDJOINT Lathing System



Clip B-1



Clip B-2

BRIDJOINT Clips

end joints, and applied to the framing members in such a manner that the ends (16" dimension) of the lath do not fall on the framing members. Nail the lath to the framing members with nails spaced approximately $\frac{3}{8}$ " from the edges and approximately 5" apart, using four nails per lath, per support (for $\frac{1}{2}$ " ROCKLATH with supports more than 16" o.c., nails must be spaced approximately 4" apart using 5 nails per lath per support). Secure end joints to adjacent lath by use of the B-1 BRIDJOINT field clip at each corner of each lath. The internal corners of lath may be secured to each other by the use of B-2 BRIDJOINT corner clips. Do not nail ROCKLATH in the corners where B-2 clips are used. Where practical, stagger joints between walls and ceilings so that vertical joints on walls do not meet ceiling joints. Corner bead shall be applied to all exterior angles by nailing through to the framing.

*Trademarks Reg. U. S. Pat. Off.

BRACE-TITE LATHING SYSTEM

DESCRIPTION

The BRACE-TITE Lathing System is a mechanical suspension of ROCKLATH plaster base to standard metal grillage ($\frac{3}{4}$ " channels not over 16" o.c.).

FUNCTION AND UTILITY

RIGIDITY SIMILAR TO NAIL-ON. The field clips, spaced 16 inches o.c., support the ROCKLATH across the full width of the board. The spring action of the field clip increases rigidity.

EASY TO APPLY. The loop of the BRACE-TITE field clip is dropped over the channel and hooked into the eye of the preceding clip.

RAPID ERECTION. Only three clips are required for each sheet of ROCKLATH plaster base plus two USG BRIDJOINT* B-1 clips at the end joint.

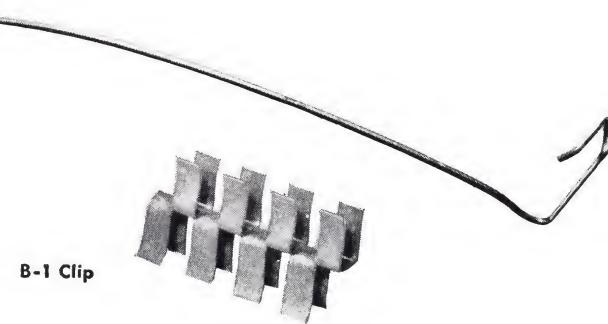
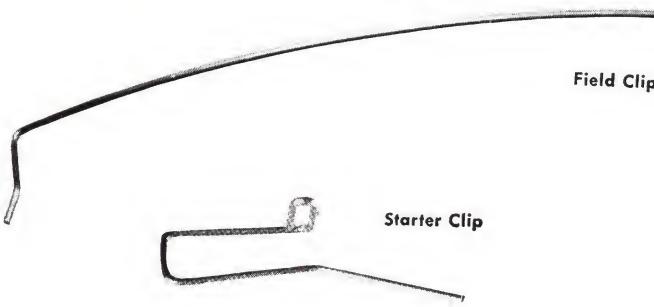
NO SPECIAL MATERIALS. Any standard $\frac{3}{4}$ " channels, hot or cold rolled, may be used on conventional 16-inch or 12-inch spacing. Plain, Perforated or Insulating ROCKLATH plaster base may be used.

ADAPTABLE. The BRACE-TITE system may be used with any type of suspension having $\frac{3}{4}$ -inch channels not over 16 inches on center.



REINFORCES PLASTER. The wire clip embedded in the plaster increases crack resistance.

COST. As the BRACE-TITE system requires only $\frac{1}{2}$ -inch of plaster in two coats, its use results in economy of application. The cost under normal conditions will approximate that of other types of mechanical suspension.



SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all ceilings are to be lathed with the BRACE-TITE Lathing System.

MATERIALS

CHANNELS—Channels shall be USG $\frac{3}{4}$ " cold rolled channels, painted.

LATH—Gypsum lath shall be $\frac{3}{8}$ " x 16" x 48" ROCKLATH Plaster Base (Plain, Perforated or Insulating).

CLIPS—Attachment clips shall be BRACE-TITE Field and Starter Clips. End joint clips shall be USG B-1 BRIDJOINT* Field Clips.

CORNERITE—Cornerite shall be USG cornerite.

All of the above materials manufactured by United States Gypsum Company.

APPLICATION

$\frac{3}{4}$ " channels shall be applied to supporting $1\frac{1}{2}$ " channels or framing members, spaced 2" from parallel walls or beams and not over 16" on centers and securely wire-tied or clipped. The channel ends must extend beyond the plane of the abutting side wall. Place a BRACE-TITE starter clip over the end of the $\frac{3}{4}$ " channel at the point where it meets the starting wall. ROCKLATH Plaster Base shall be applied with the long dimension at right angles to the $\frac{3}{4}$ " channel. ROCKLATH

*Trademarks Reg. U. S. Pat. Off.

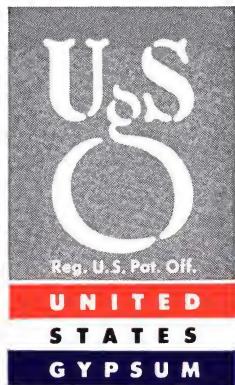
shall rest on top of the starter clip loops, and shall be fastened to each channel with a BRACE-TITE field clip. ROCKLATH end joints shall fall midway between channels and shall be secured with USG B-1 BRIDJOINT field clips on both sides. Succeeding courses of ROCKLATH Plaster Base shall be attached with BRACE-TITE field clips hooked over the channel and fastened into the eyes of the preceding clips. End joints of ROCKLATH shall be staggered, and shall not coincide with the end joints of previous courses. All end joints shall be secured with B-1 BRIDJOINT Clips on both sides.

The last course of ROCKLATH shall be cut to the width required to fill the remaining space. The BRACE-TITE field clip used for this final course shall be inserted over preceding clip, pulled tight into eye and excess length cut off.

Where $\frac{3}{4}$ " channel runs are interrupted by light troffers, grills, etc., BRACE-TITE starter clips shall be used to start a new course of ROCKLATH. For these locations, the extended leg of the starter clip shall be cut off so as not to protrude below the brown coat of plaster.

Angles between the ceiling and all vertical planes shall be reinforced over the ROCKLATH Plaster Base with USG Cornerite. The Cornerite shall be secured sufficiently to retain its position during plastering.

NOTE—Plaster shall be RED TOP* Gypsum Plaster manufactured by United States Gypsum Company, and shall be applied in accordance with the manufacturer's specifications for application over ROCKLATH Plaster Base.



TECHNICAL INFORMATION
 TWO-INCH SOLID
ROCKLATH
T. M. Reg. U. S. Pat. Off.
 AND PLASTER PARTITION



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2" SOLID ROCKLATH AND PLASTER PARTITION

DESCRIPTION

The 2" Solid ROCKLATH and Plaster Partition is a studless, non-loadbearing partition consisting of long length ROCKLATH plaster base, held vertically in floor and ceiling runners, and plastered on both sides. *Size of ROCKLATH—1/2" thick, 24" wide by ceiling-high lengths with longitudinal "V" edges.*

FUNCTION AND UTILITY

Fireproof—Composed essentially of gypsum, the partition is incombustible and will not transmit temperatures greatly in excess of 212° until completely calcined—a slow process. See Technical Data for one hour fire rating.

Lightweight—Only 16 lbs. per sq. ft. of finished partition.

Space Saving—Saves 40 to 60 per cent of space occupied by conventional partitions. In every five lineal feet, a 2"

partition creates one extra square foot of usable space over a 4½" partition.

Lateral Strength—The records of an official impact test show that a 60-lb. weight, traveling through a 4-foot fall, failed to produce a discernible crack on a full sized partition after three successive impacts.

Cost—Without consideration to space saving, the actual cost is comparable and competitive with conventional wood or metal studs with ROCKLATH plaster base and plaster, both sides.

Complies with FHA requirements for rental housing.

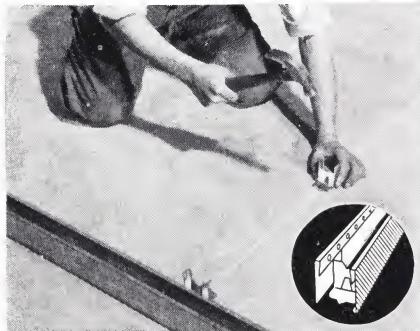
LIMITATIONS OF USE

1. For non-bearing partitions only.
2. Limiting height twelve feet.
3. For 1 hour fire rating, RED TOP* plaster sanded 1:1 scratch coat and sanded 1:2 brown coat must be used.

"ROCKLATH" and "RED TOP" are registered trademarks owned by United States Gypsum Company, used by it to distinguish its products. "ROCKLATH" identifies the particular gypsum lath or plaster base. "RED TOP" identifies the particular plaster manufactured only by United States Gypsum Company.

TECHNICAL DATA

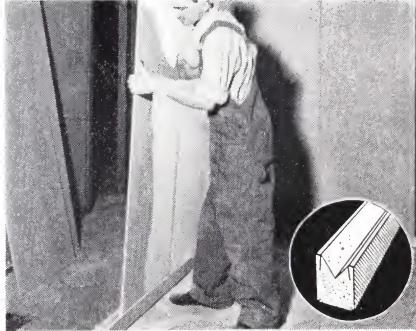
Construction	Limiting Height	Weight Per Square Foot	Fire Rating	Reference	Sound Transmission Loss	Reference
½" Long-length ROCKLATH plastered both sides with ¾" RED TOP Plaster, sanded 1:1, 1:2	12 Ft.	16 lbs.	1 Hr.	A Nationally Recognized Fire Testing Lab. Name on request.		
Same, but plastered 1:2 scratch—1:3 brown	12 Ft.	16 lbs.	45 Min.	USG Lab.	37.3	Bureau of Standards



1. Nail clips to floor, 24 inches on center. Snap side plates of metal base over shoulders of clips. Grout base section with plaster as shown in 3.



2. Attach L-shaped ceiling runner with center of top flange over center of base.



3. Place bottom edge of long length ROCKLATH plaster base in groove of floor runner and top edge against vertical flange of ceiling runner.



4. Secure top edge of ROCKLATH to ceiling runner with hairpin clips shown in insert. Use 2 clips per board.

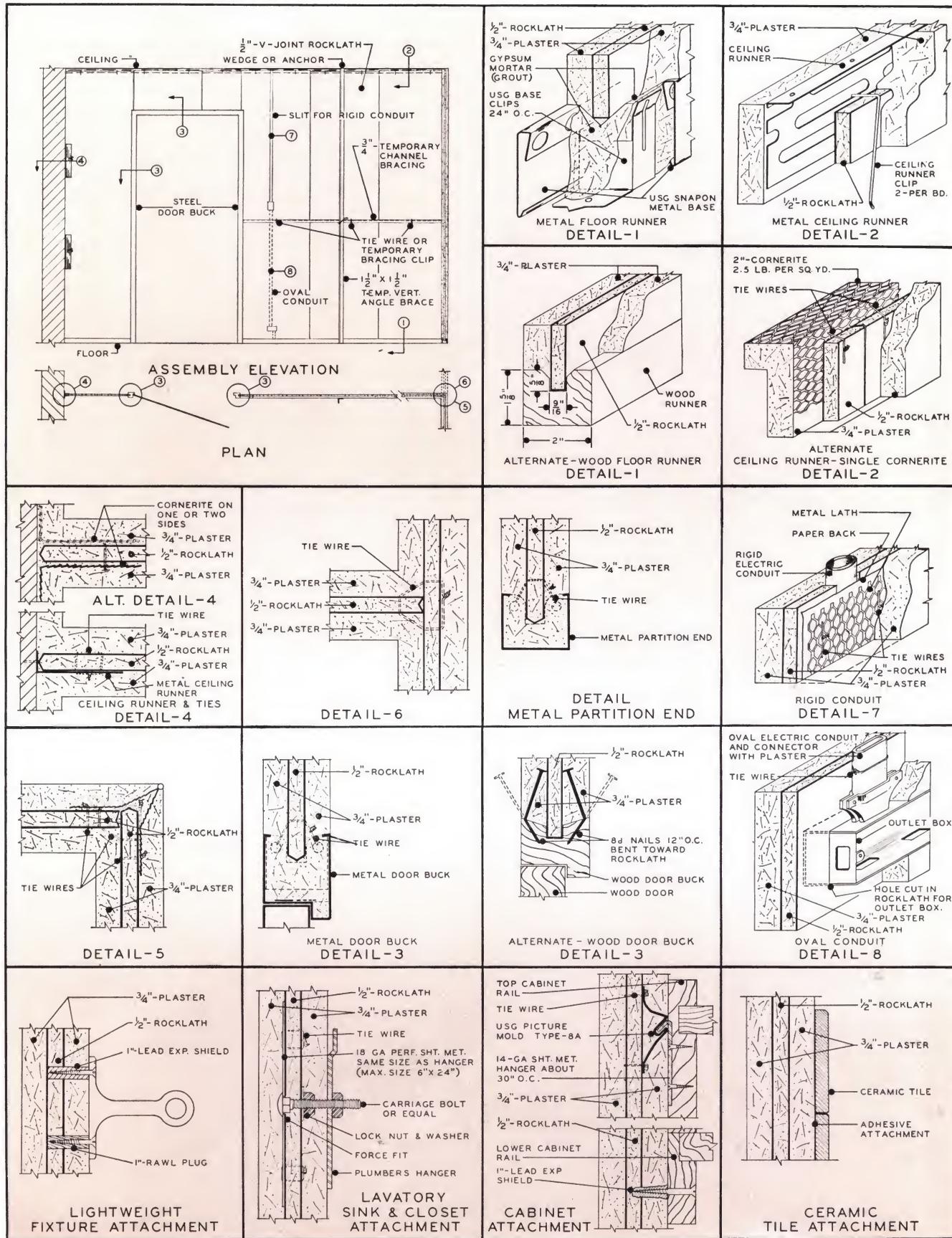


5. One horizontal brace consisting of a ¾" channel held in place with the bracing clip shown is sufficient for partitions up to nine feet.



6. Temporary vertical bracing, 6 feet on centers, tied to horizontal bracing and securely anchored at floor and ceiling and interlocking V-edges provide rigidity.

2" SOLID ROCKLATH AND PLASTER PARTITION



2" SOLID ROCKLATH AND PLASTER PARTITION

SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all interior, non-loadbearing partitions (*and exterior wall furring*) are included.

MATERIALS

Lath—Gypsum long-length lath shall be V-joint plain ROCKLATH $\frac{1}{2}$ " thick, 24" wide by ceiling-high length manufactured by the United States Gypsum Company. (Lath for furring of exterior walls shall be $\frac{3}{8}$ " square edge Insulating long-length ROCKLATH.)

Plaster—Shall be RED TOP Gypsum Plaster manufactured by the United States Gypsum Company.

Sand—Shall conform to the ASTM designation C 35-39.

Floor Runner—Shall be USG $2\frac{1}{2}$ " high, flush Metal Base. (Or, shall be $1\frac{5}{8}$ " x 2" wood runner, milled according to detail. Wood to be select stock and resistant to splitting.)

Ceiling Runner—Shall be USG Metal Ceiling Runner.

Priming—Metal or Wood Runners and Bucks to be factory or field prime-coated before plastering.

Plaster Finish—As selected by the architect. (See specifications under Gypsum Plaster Base Coats and Finishes, AIA File No. 21-A-2, pages 9 to 13.)

APPLICATION

Floor Runner—Metal Base shall be attached to rough floor by nailing clips not over 24" o.c. according to partition layout. Snap side plates over clips, cutting and bending at corners as required. Fill base with gypsum-sand grout and form a V-groove as grout stiffens and before it sets.

Ceiling Runner—Attach to ceiling construction as required by plumbing up from floor runner.

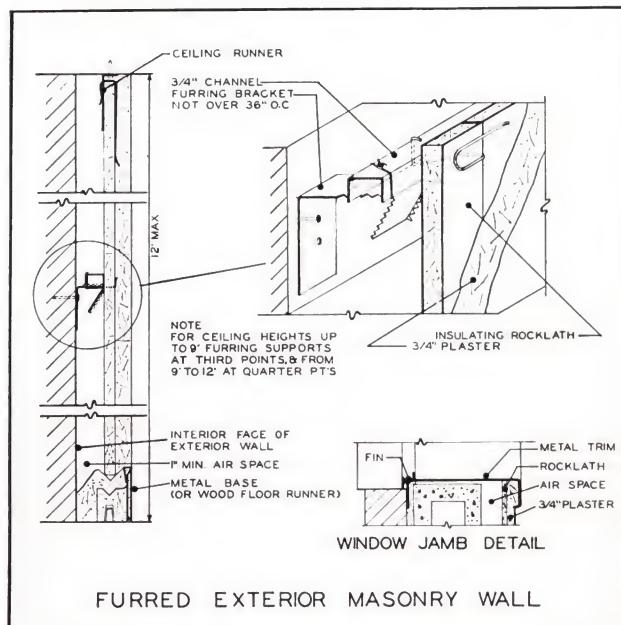
Lathing—ROCKLATH plaster base shall be cut in lengths to allow a minimum $\frac{1}{4}$ " top clearance in the ceiling runner. The ROCKLATH shall be erected vertically, engaging the bottom in the groove of floor runner and either tying or clipping top to ceiling runner. Vertical edges of ROCKLATH shall be kept as plumb as possible and the V-joint edges be brought into intimate contact one with the other. No vertical cut edges of lath shall be used in the central portion of partition. The use of lath having cut edges shall be confined to the ends of the partition or at door bucks. ROCKLATH shall be neatly cut for electrical conduit, other piping or struts, and one side shall be covered with metal lath backed with paper fastened to the ROCKLATH. Where ROCKLATH plaster base intersects other partitions, exterior walls or columns, it shall be wire-tied or fastened to strips of cornerite or ceiling runner at the third points of height.

Bracing—For partitions not over 9' in height, bracing shall consist of a $\frac{3}{4}$ " steel channel erected horizontally just below midpoint of height. The bracing member shall extend the full length of the partition and shall be fastened to the lath by the use of tie wires looped over the channel, or USG wire bracing clip, at center of the lath in such a manner as to keep the lath joints together as well as securing the channels to the lath. It shall be similarly wire-tied or clipped to the lath at channel ends.

For partitions over 6' in length, the horizontal braces shall be reinforced by vertical struts every 6' or fraction thereof formed from $1\frac{1}{2}$ " x $1\frac{1}{2}$ " angles (or heavier materials) fastened securely at the bottom and wedged firmly against the construction at the head. Vertical struts shall be securely wire-tied to horizontal braces.

For partitions over 9' in height, two horizontal braces at third points shall be used. Attach lath in a similar manner.

Alternate Bracing—Temporary wood bracing members may be used in lieu of metal bracing, provided they are attached in a similar manner to hold lath rigid during initial plastering stages.



FURRED EXTERIOR MASONRY WALL

Plastering—Plaster shall be sanded in proportion of 1 part plaster to 2 parts sand, by weight, for the scratch coats and 1 part of plaster to 3 parts of sand, by weight, for the brown coats. (See Note 3 under Optional Inclusions.) Procedure shall be as follows:

First, apply a scratch coat of plaster, about $\frac{3}{8}$ " thick, to each side of the lath. In no case, shall application of scratch coat to second side of lath be delayed longer than the setting time of the scratch coat applied to the first side.

After the scratch coats have set firmly and have partially dried (but not less than 16 hours), the brown coat shall be applied to the un-braced side, bringing it out to within $\frac{1}{16}$ " of ground dimension for finish coat to bring over-all partition thickness to 2 inches.

When brown coat has set firmly (but not less than 3 hours), braces shall be carefully removed from opposite side and brown coat applied to that side in a manner similar to that described for the other brown coat.

Finish Coat—As specified elsewhere.

OPTIONAL INCLUSIONS

1. All exterior walls shall be horizontally furred with $\frac{3}{4}$ " channels at third points for ceiling heights of 9' or less and quarter points for ceilings not exceeding 12' in height. Floor and ceiling runner tracks shall be secured in the same manner as for 2" solid ROCKLATH and Plaster Partitions.

Insulating ROCKLATH plaster base shall be placed in floor and ceiling runners with the bright aluminum foil toward the structural wall. Secure the Insulating ROCKLATH to furring channels with tie wire. (See Details.) Adjacent sheets shall be butted snugly.

2. **Door Bucks**—Shall be as specified elsewhere. They shall be grooved or furnished with inserts to receive $\frac{1}{2}$ " ROCKLATH. They shall be secured to the partition according to the printed instructions of manufacturer.

3. Where one (1) hour fire rating is required, change proportions to 1 part plaster to 1 part sand by weight for scratch coat and 1 part plaster to 2 parts sand by weight for brown coat." Floor runner must be USG Metal Base or, if wood runner, it shall be "Fire-proofed."

TECHNICAL INFORMATION

GYPSUM PLASTER

BASE COATS & FINISHES

FINISHING LIME & EXTERIOR STUCCO



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"RED TOP," "BONDCRETE," "PYROBAR," "ROCK-LATH," "ORIENTAL," "SABINITE," "IVORY," "GRAND PRIZE," "CHAMPION," "STAR" and "USG" are registered trade-marks owned by United States Gypsum Company and are used by it to distinguish products of its manufacture.

"RED TOP" identifies the particular plasters and finishes manufactured only by the United States Gypsum Company.

"BONDCRETE" identifies the particular plaster for concrete surfaces manufactured only by the United States Gypsum Company.

"PYROBAR" identifies the particular gypsum partition tile manufactured only by the United States Gypsum Company.

"ROCKLATH" identifies the particular gypsum lath or plaster base manufactured only by the United States Gypsum Company.

"ORIENTAL" identifies the particular colored finishes manufactured only by the United States Gypsum Company.

"SABINITE" identifies the particular acoustical plaster manufactured only by the United States Gypsum Company.

"IVORY" and "GRAND PRIZE" identify the particular hydrated lime manufactured only by the United States Gypsum Company.

"CHAMPION" and "STAR" identify the particular white gauging plasters manufactured only by the United States Gypsum Company.

"TRUSSTEEL" identifies the particular truss designed stud manufactured only by the United States Gypsum Company.

BASECOAT PLASTERS

RED TOP* CEMENT PLASTER

DESCRIPTION

RED TOP Cement Plaster is a neat gypsum plaster requiring the addition of an aggregate and water on the job. It is the basecoat that receives the finish coat plaster.

Complies with ASTM Designation C28-40 for "Gypsum Neat Plaster" and Federal Specification SS-P-402, Type N.

FUNCTION AND UTILITY

RED TOP Cement Plaster is used for scratch (1st coat) and brown (2nd coat) wherever good plastering aggregate is available.

FIREPROOF—Made from gypsum rock, it is incombustible and will not transmit high temperatures until completely calcined; a slow process. In this respect, gypsum plaster is unique. See fire test data page 8, for authoritative fire ratings.

ADAPTABLE—RED TOP Cement Plaster bonds firmly with ROCKLATH* plaster base, metal lath, fiber insulation lath, wood lath, PYROBAR* gypsum partition tile, clay tile, porous brick and certain other approved plaster bases.

RED TOP Cement Plaster is the standard of excellence for receiving such finish coats as lime putty, Keene's Cement, gypsum trowel finish, gypsum float finish, ORIENTAL* Interior finish, gypsum acoustical plasters, etc. It is an excellent base to receive acoustical tile.

RED TOP Cement Plaster is plastic, permitting wide latitude in its use for plain or curved surfaces.

UNIFORM—RED TOP Cement Plaster is manufactured on a nation-wide basis within narrow limits of tolerance. Its "stabilized set" minimizes the hazards due to impure water or aggregate and job conditions. Its set is adjusted for seasonal conditions.

STRONG—When mixed with good sand according to specifications, RED TOP Cement Plaster has a compressive strength up to 1,000 lbs. per sq. in. (see test data, page 36). It is capable of withstanding normal wear and usage for the life of the building.



ECONOMICAL—RED TOP Cement Plaster is lowest in cost of the various types of gypsum basecoats because:

The neat plaster is low in cost and is mixed with economical aggregate which increases bulk and coverage.

RED TOP Cement Plaster is highly plastic, thus is easily and quickly applied by the mechanic.

Normal usage requires little or no maintenance.

LIMITATIONS OF USE

1. RED TOP Cement Plaster should have aggregate added strictly according to specifications. Use of too much aggregate drastically decreases its strength. Sand content is easily calculated. A No. 2 shovel full of damp sand weighs approximately 15 lbs. The light weight aggregates are generally shipped in 4 cu. ft. bags.

2. Under no conditions should RED TOP Cement Plaster be applied to concrete. Use BONDCRETE* Plaster, described on page 7.

3. RED TOP Cement Plaster should not be used where contact with excessive water or moisture is expected. In such instances, use portland cement-lime plaster.

4. RED TOP Cement Plaster is an interior basecoat plaster and should not be used on the exterior where exposed to the elements.

5. Because bituminous compounds do not provide an ideal base for gypsum plaster basecoats, plaster application on masonry walls and concrete that have been coated with these compounds is not recommended.

BASECOAT PLASTERS

PLASTERING SPECIFICATIONS (FOR RED TOP CEMENT PLASTER)

GENERAL PROVISIONS

In cold weather a minimum temperature of 40° F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise specified or shown on drawings, all walls and ceilings shall be plastered as herein described.

MATERIALS

Basecoat plaster shall be RED TOP Cement Plaster manufactured by the United States Gypsum Company (except that the scratch coat over metal lath shall be fibred RED TOP Cement Plaster).

Aggregate (Note to Architect—Select one or more of the following aggregates as desired or required to meet fire resistance rating.)

Sand—Shall be clean and sharp, complying with ASTM designation C35-39.

Vermiculite—Shall be standard plaster aggregate complying with ASTM designation C35-39 for particle size and shall weigh between 7½ and 10 pounds per cubic foot.

Perlite—Shall be standard plaster aggregate complying with ATSM designation C35-39 for particle size and shall weigh between 7½ and 15 pounds per cubic foot.

Water—Shall be clean, fresh and suitable for domestic consumption.

Finish Plaster—(Note to Architect—Select the desired finish from pages 10 to 14, and insert herein the applicable materials.)

GROUNDS

The total plaster thickness over gypsum lath, gypsum partition tile or fiber insulation lath, shall be ½"; over brick, clay tile or other masonry, it shall be 5/8" thick and over metal lath the plaster thickness shall be 5/8" measured from the face of the lath. (Greater thickness in grounds may be required for certain fire ratings. See table, page 8.)

MIXING OF BASECOATS

For *Three-Coat Work*, the scratch or first coat over all lath shall be mixed in the proportion of one part plaster to not more than two parts sand by weight (13 No. 2 shovels of damp sand per 100-lb. bag of plaster) or 100 lbs. of gypsum plaster to not more than 2 cu. ft. of vermiculite or perlite. The brown or second coat over all lath shall be mixed in the proportion of one part gypsum plaster to

not more than three parts sand by weight (20 No. 2 shovels of damp sand per 100-lb. bag of plaster) or 100 lbs. of gypsum plaster to 3 cu. ft. of vermiculite or perlite.

For *Two-Coat Work* over masonry surfaces (except monolithic concrete) the base (scratch double back) shall be mixed in the proportion of one part plaster to three parts sand by weight or 100 lbs. of plaster to 3 cu. ft. of vermiculite or perlite. When perlite is used as the aggregate over masonry and it is impractical to reduce suction by wetting, the amount of perlite may be increased to not more than 4 cu. ft.

(*Note to Architect*)—In scratch double back application of gypsum cement plaster to gypsum lath or fibre insulation lath only the proportions shall be as follows:

Two-Coat Work, over gypsum lath or fibre insulation lath, shall be in the proportion of one part gypsum cement plaster to not more than 2½ parts of sand by weight (17 No. 2 shovels of damp sand per 100-pound bag of plaster) or 100 pounds of gypsum plaster to not more than 2½ cubic feet of vermiculite or perlite.

APPLICATION OF BASECOATS

(*Note to Architect*). *Three-coat work is the preferred plaster specification, because it is more conducive to application to full grounds. It may be used throughout the job except over masonry where 2-coat work is preferred. Three-coat work should always be required over metal lath and resilient lathing systems.*

Three-Coat Work—Scratch (first) coat shall be applied with sufficient material and pressure to form good full keys on wood and metal lath, wire lath and wire fabric, and good bond on gypsum or fibre insulation lath, as the case may be, and to cover well, and then be scratched to rough surface.

Brown (second) coat shall be applied after the scratch (first) coat has set firm and hard, brought out to grounds and straightened to a true surface with rod and darby, and left rough, ready to receive the finish (third) coat.

Two-Coat Work—Base (first) coat shall be applied with sufficient material and pressure to form good full keys on wood lath, and good bond on gypsum or fibre insulation lath or masonry, as the case may be, and to cover well, and then be doubled back to bring the plaster out to grounds, straightened to true surface with rod and darby and left rough, ready to receive the finish (second) coat. To avoid excess suction and dry-outs, it is preferable to moderately wet masonry surfaces before plastering.

MIXING AND APPLICATION OF FINISHES

Use the applicable finish coat specifications selected from pages 10 to 14.

BASECOAT PLASTERS

RED TOP WOOD FIBER PLASTER

DESCRIPTION

RED TOP Wood Fiber Plaster is a factory-prepared gypsum basecoat plaster containing finely-shredded, selected wood fiber. It requires the addition of water only on the job.

Complies with ASTM Designation C28-40 "Gypsum wood-fibered plaster" and Federal Specifications SS-P-402, Type W.

FUNCTION AND UTILITY

STRONGER—Compared to plaster sanded 1:3, Wood Fiber Plaster has:

3 times greater compressive and tensile strength.
2½ times greater resistance to lateral impact.

50 per cent greater surface hardness.

Consequently, has greater resistance to cracking.

FIREPROOF—Generally 50 per cent more fire resistant than sanded plaster. See ratings on page 8.

FACTORY PREPARED—Particularly suitable where good aggregates are unavailable. Avoids dangers of improper proportioning of aggregates.

LIGHTWEIGHT—Dead load is 25 per cent lighter than sanded plaster.

COST—A wood fiber basecoat plaster job costs approximately 15 per cent more than RED TOP Cement Plaster sanded on the job.

LIMITATIONS

Same as paragraphs 2, 3, 4 and 5 under Limitations for use of RED TOP Cement Plaster, page 3.

PLASTERING SPECIFICATIONS (FOR RED TOP WOOD FIBER PLASTER)

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise specified or shown on drawings, all walls and ceilings shall be plastered as herein described.

MATERIALS

Basecoat plaster shall be RED TOP Wood Fiber Plaster manufactured by United States Gypsum Company.

Finish Plaster—(Note to Architect—Select the desired finish from pages 10 to 14, and insert herein the applicable materials).

GROUNDS

The total plaster thickness over gypsum lath, PYROBAR gypsum partition tile or fiber insulation lath shall be $\frac{1}{2}$ "'; over brick, clay tile or other masonry, it shall be $\frac{5}{8}$ " thick, and over metal lath the plaster thickness shall be $\frac{5}{8}$ " measured from the face of lath.

MIXING AND APPLICATION

On all types of lath, RED TOP Wood Fiber Plaster shall be mixed with water only on the job. The scratch and brown coats over masonry surfaces (except monolithic concrete), shall be mixed in the proportion of 1 part Wood Fiber Plaster to 1 part sand by weight (7 No. 2 shovels of damp sand per 100-lb. bag Wood Fiber plaster).

The scratch coat of plaster shall be applied to a thickness of approximately $\frac{1}{4}$ " with sufficient pressure to form a good bond. Cross rake and allow to set. When partially dry, apply the brown or second coat to full grounds, allowing approximately $\frac{1}{6}$ " for the finish coat. Rod and darby to a true and level surface and roughen slightly.

All porous masonry surfaces shall be moderately wetted to provide proper suction before plastering. Brown (second coat) shall be applied after the scratch (first coat) has "taken up," but before it sets.

OPTIONAL INCLUSION

At the option of the contractor, all brown coats may be applied to the unset scratch coat, except when plastering over metal lath or Resilient ROCKLATH ceilings.

MIXING AND APPLICATION OF FINISH COAT PLASTER

Use the applicable finish coat specifications selected from pages 10 to 14.

BASECOAT PLASTERS

RED TOP SANDED PLASTER

DESCRIPTION

RED TOP Sanded Plaster is a factory-sanded gypsum basecoat plaster requiring the addition of water only, on the job.

Complies with ASTM Designation C28-40 for "Gypsum Ready-sanded Plaster" and Federal Specification SS-P-402, Type S (scratch coat) or Type B (brown coat).

FUNCTION AND UTILITY

RED TOP Sanded Plaster is particularly suitable where good plastering sand is not available. It provides all those features described for RED TOP Cement Plaster, plus the following:

FACTORY SANDED—Properly selected aggregate correctly proportioned and machine-mixed.

COST—Slightly higher than job-sanded RED TOP Cement Plaster, but more economical than other gypsum basecoat plasters.

LIMITATIONS OF USE

Same as paragraphs 2, 3, 4 and 5 of Limitations of Use under RED TOP Cement Plaster, page 3.



PLASTERING SPECIFICATIONS (FOR RED TOP SANDED PLASTER)

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise specified or shown on drawings, all walls and ceilings shall be plastered as herein described.

MATERIALS

Basecoat Plaster shall be RED TOP Sanded Plaster manufactured by United States Gypsum Company. Over masonry, RED TOP Sanded Plaster (for masonry) shall be used.

Finish Plaster (Note to Architect—Select the desired finish from pages 10 to 14, and insert herein the applicable materials).

GROUNDS

The total plaster thickness over gypsum lath, PYROBAR gypsum partition tile or fiber insulation lath shall be $\frac{1}{2}''$; over brick, clay tile or other masonry it shall be $\frac{5}{8}''$

thick, and over metal lath the plaster thickness shall be $\frac{5}{8}''$ measured from the face of the lath.

MIXING AND APPLICATION

Sanded plaster shall be mixed with water only. The scratch coat of plaster shall be applied to a thickness of approximately $\frac{3}{8}''$ with sufficient pressure to form a good bond. Cross rake and allow to set. When partially dry, apply the brown or second coat to full grounds, allowing approximately $\frac{1}{16}''$ for the finish coat. Rod and darby to a true and level surface and roughen slightly.

All porous masonry surfaces shall be moderately wetted to provide proper suction before applying scratch coat. Brown (second coat) shall be applied after the scratch (first coat) has "taken up," but before it sets.

OPTIONAL INCLUSION

At the option of the contractor, all brown coats may be applied to the unset scratch coat, *except when plastering over metal lath or Resilient ROCKLATH ceilings*.

MIXING AND APPLICATION OF FINISH COAT PLASTER

Use the applicable finish coat specifications selected from pages 10 to 14.

BASECOAT PLASTERS

BONDCRETE* PLASTER

DESCRIPTION

RED TOP BONDCRETE is a gypsum basecoat plaster specially formulated to bond with rough interior monolithic concrete surfaces. It is factory prepared, requiring addition of water only on the job.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

BONDCRETE is plaster especially prepared for application to concrete. It provides the bonding plaster to receive a browning, or leveling, coat of RED TOP Cement Plaster or Wood Fiber Plaster when necessary.

If a leveling coat is unnecessary, the finish plaster may be applied directly to the BONDCRETE.

BONDING STRENGTH—BONDCRETE adheres well

to properly prepared concrete surfaces. See Surface Preparation under Specifications for proper conditioning of concrete surfaces. This is important.

The thermal coefficient of expansion of BONDCRETE is approximately the same as for concrete.

LOW COST—An economical bonding coat to provide for the application of plaster direct to concrete surfaces.

LIMITATIONS OF USE

1. BONDCRETE should be used only on concrete that is properly prepared for plastering. It should never be applied to smooth concrete.

2. Maximum thickness of BONDCRETE and basecoat shall not exceed $\frac{3}{8}$ " on ceilings or $\frac{5}{8}$ " on walls. If additional thickness is required, metal lath shall be secured to the concrete surfaces.

3. The same as paragraphs 3, 4, and 5 under RED TOP Cement Plaster, page 3.

PLASTERING SPECIFICATIONS

(FOR RED TOP BONDCRETE PLASTER)

1. *Under Materials of the Plastering Specification, include the following:*

Basecoat for plastering over concrete surfaces shall be BONDCRETE manufactured by United States Gypsum Company.

2. *Under Mixing and Application, include the following:*

Mix BONDCRETE with water only. Concrete surfaces to receive plaster shall be properly prepared as specified elsewhere. Surfaces of walls and columns shall have a scratch coat of bond plaster, followed by a brown coat of gypsum plaster (in the proportions of 1 part of gypsum neat plaster to not more than 3 parts of sand, by weight) trowelled into the scratch coat before it has set. The brown coat shall be brought out to grounds, straightened to a true surface with rod and darby, and left rough, ready to receive the finish coat. Total thickness of plaster not to exceed $\frac{5}{8}$ ".

Concrete ceilings shall have a coat of bond plaster scratched in thoroughly, doubled back, and filled out to a true, even surface and left rough, ready to receive the finish coat. Total thickness of plaster not to exceed $\frac{3}{8}$ ".

If additional thickness of plaster is required, metal lath shall be secured to the concrete surface.

3. *A separate paragraph must be included as follows:*

*Trademark Reg. U.S. Pat. Off.

Surface Preparation. Monolithic concrete surfaces shall be cleaned of all dust, loose particles, and other foreign matter. Laitance and efflorescence shall be removed by washing first with a 10 per cent solution of commercial muriatic acid and water and then with clean water to remove all traces of acid. Grease and oil shall be completely removed.

Note to Architect: A smooth concrete surface resulting from pouring on smooth forms, or vibrating of concrete, is an improper base for BONDCRETE application. (See Red Top Cover Coat, page 13.)

Concrete surfaces shall have sufficient roughness to provide proper bond. If surfaces are not rough, they shall be hacked or bush-hammered, or a dash-coat of portland cement grout, composed of 1 part of cement and $1\frac{1}{2}$ parts of fine sand mixed to a mushy consistency, shall be applied. Using a stiff fiber brush, the portland cement grout shall be forcibly dashed on the concrete surface with a whipping motion. This coat shall be kept damp for at least 2 days immediately following its application and then allowed to dry. Before application of the plaster, the surface shall be evenly dampened if necessary to provide proper suction.

BASECOAT PLASTERS

TECHNICAL DATA AVERAGE TEST RESULTS

MIX:	WOOD FIBER	CEMENT PLASTER						
		SAND			VERMICULITE		PERLITE	
		Neat	1:1	1:2	1:3	100:2	100:3	100:2
COMPRESSIVE STRENGTH—psi (dry)	2600	2100	1200	750	500	300	1000	650
TENSILE STRENGTH—psi (dry)	440	245	170	120	130	90	165	105
COST FACTOR, LABOR & MATERIAL	100	95	93	90	95	95	95	95

FIRE TEST DATA

CONSTRUCTION	TYPE BASE	PLASTER & AGGREGATE	THICKNESS	RATING AND REFERENCE	
				PARTITIONS	CEILINGS
Wood Frame	3/8" ROCKLATH Plain	Gypsum-Sand 1:2, 1:2	1/2"	45 Minutes (1)	
Wood Frame	3/8" ROCKLATH Plain	Gypsum Wood Fiber	1/2"	1 Hour (1)	
Wood Frame	3/8" Perf. ROCKLATH	Gypsum-Sand 1:2, 1:2	1/2"	1 Hour (1)	
Wood Frame	3/8" Perf. ROCKLATH	Gypsum-Perlite 100:2 1/2, 100:2 1/2 (4)	1/2"	1 Hour (2)	
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	45 Minutes (1)	
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:2	3/4"	1 Hour (1)	
Wood Frame	Metal Lath	Gypsum Wood Fiber	3/4"	1 1/2 Hours (1)	
Wood Frame	Metal Lath	Gypsum-Vermiculite 100:2 1/2, 100:3 1/2	3/4"	1 Hour (2)	
3" Hollow PYROBAR		Gypsum-Sand 1:3	1 1/2"	2 Hours (1) (2) (3)	
4" Hollow PYROBAR		Gypsum-Sand 1:3	1 1/2"	3 Hours (1) (3)	
Solid	Metal Lath	Gypsum-Sand 1:2, 1:3	2"	45 Minutes (1)	
Solid	Metal Lath	Gypsum-Sand 1:2, 1:2	2"	1 Hour (3)	
Solid	Metal Lath	Gypsum Wood Fiber	2"	1 3/4 Hours (1)	
Solid	Metal Lath	Gypsum Wood Fiber	2 1/4"	2 Hours (1)	
Solid	ROCKLATH	Gypsum-Sand 1:2, 1:2	2"	1 Hour (3)	
TRUSSTEEL† Stud	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	45 Minutes (1)	
TRUSSTEEL Stud	Metal Lath	Gypsum-Sand 1:2, 1:3	7/8"	1 Hour (1)	
TRUSSTEEL Stud	Metal Lath	Gypsum-Sand 1:2, 1:2	3/4"	1 Hour (1)	
TRUSSTEEL Stud	Metal Lath	Gypsum Wood Fiber	7/8"	2 Hours (1)	
Wood Frame	3/8" Perf. ROCKLATH	Gypsum-Sand 1:2	1/2"	45 Minutes (1) (2)	
Wood Frame	3/8" Perf. ROCKLATH*	Gypsum-Sand 1:2	1/2"	1 Hour (1)	
Wood Frame	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	45 Minutes (1)	
Wood Frame	Metal Lath**	Gypsum-Sand 1:2, 1:3	3/4"	1 Hour (1)	
Wood Frame	Metal Lath	Gypsum Wood Fiber	3/4"	1 Hour (2)	
Steel Joist***	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"	2 Hours (1)	
Steel Joist***	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	3/4"	3 Hours (1)	
Steel Joist***	Metal Lath	Gypsum Wood Fiber	1"	3 Hours (1)	
Steel Joist***	Metal Lath	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours (1)	
Steel Joist***	Metal Lath	Gypsum Wood Fiber	1"	4 Hours (1)	
Cellular Steel Floor	Metal Lath****	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours (1)	
Cellular Steel Floor	Metal Lath****	Gypsum Wood Fiber	1"	4 Hours (1)	
Cellular Steel Floor	Metal Lath****	Gypsum-Vermiculite 100:2, 100:3	1"	4 Hours (1)	
		Gypsum-Perlite 100:3, 100:3 (4)	1"	4 Hours (2)	
Steel Section	Metal Lath	Gypsum-Sand 1:2, 1:3	3/4"		
Steel Section	Metal Lath*****	Gypsum-Vermiculite 100:2, 100:3	1"	1 Hour (1)	
Steel Section	Metal Lath*****	Gypsum-Vermiculite 100:2, 100:3	1 1/2"	3 Hours (2)	
Steel Section	Metal Lath*****	Gypsum-Perlite 100:3, 100:3 (4)	1"	4 Hours (2)	
Steel Section	Pyrobar-2" Solid, or 3" Hollow	Gypsum-Sand 1:3	1/2"	4 Hours (1)	

(1) National Bureau of Standards. (2) Underwriters' Laboratories. (3) Nationally recognized fire testing laboratory—name on request.

(4) Great Lakes Carbon Corporation's "Permalite" Perlite.

*Lath applied with 1 1/8", 13 gauge nails, 3/8" head and joints covered with Striplath. 1 3/4" nails.

**Lath applied with 1 1/2", 11 gauge, 7/16" head barbed roofing nails, 6" O.C.

***2 1/2" reinforced concrete slab on Riblath or 2" precast gypsum tile above.

****Ceiling 9" or more below floor slab.

*****Metal Lath spaced minimum of 1 1/4" from column.

†Trademark Reg. U. S. Pat. Off.

FINISHING PLASTERS

DESCRIPTION

The finish coat plaster provides the base for final wall or ceiling decoration. It is applied to a thickness of $\frac{1}{16}$ " to $\frac{1}{8}$ ", usually over a gypsum plaster basecoat.

Several types of finish coats are available, each with characteristics to serve specific requirements, and generally classified according to the principal cementitious ingredient as follows:

1. Lime and Gauging, commonly known as "white coat" for a smooth white trowel finish. It consists of lime, soaked to a smooth putty, and mixed with gypsum gauging plaster. With addition of sand, is adaptable for sand float finishes. The three essentials to a good white coat job are:

- Lime must be highly plastic and completely hydrated.
- Correct proportioning of gauging plaster to lime putty (see specifications) and thorough blending of ingredients.
- Careful application and sufficient trowelling to produce a smooth glossy surface.

2. Lime and Keene's—for extra hard smooth white trowel finish. With addition of sand, is adaptable for sand float finishes. Also available mill mixed and colored under "ORIENTAL"*, Interior Finish brand.

3. Gypsum—Trowel (smooth), or sand float prepared finishes.

4. Acoustical Plaster—(SABINITE*), for sound absorption. (See page 13 or AIA File 39-B.)

ESSENTIALITY OF COMPLETE HYDRATION IN DOLOMATIC FINISHING LIMES

Some years ago an exhaustive investigation was undertaken by the National Bureau of Standards in co-operation with several architects and lime manufacturers to determine reasons for "lime bulges" (delamination of finish from basecoat) occurring on many government and private buildings. The failures investigated occurred on surfaces which had been "white coated" with *dolomitic* hydrated finishing limes from the Ohio fields, which have been widely used. Failures often occur 5 or 10 years after erection of the buildings.

After much analysis, it was the consensus of opinion that the delayed hydration and attendant expansion of unhydrated oxides in the "normal" dolomitic finishing limes resulted in bulging and delamination.

To correct this difficulty, United States Gypsum Company took the lead in developing "IVORY"*, Pressure Hydrated finishing lime, a "fully" or "pressure" (less than 8 per cent unhydrated) hydrated Ohio dolomitic finishing lime.

ASTM specifications C206-46T for *special* finishing lime and proposed amendments to Federal specifications, have been written to cover 92 per cent hydrated limes; a specification has been published by the National Lime Association. This type of finishing lime is required by ASA Specifications for Gypsum Plastering, A42.1-1946.

Note that all high calcium hydrated limes (properly soaked) comply with these requirements as do high calcium quicklimes (properly slaked).

TECHNICAL DATA—FINISH PLASTERS

	GAUGING PLASTER TO LIME	QUICK TROWELLING KEENE'S TO LIME		GYPSUM TROWEL FINISH	GYPSUM FLOAT FINISH	OR- IENTAL FINISH
Mix by weight of dry materials:	1:2	2:1 Medium Hard	4:1 Hard	NEAT	NEAT	NEAT
Color	White	White	White	White	White or Gray	12 Colors
Finish Texture	Smooth	Smooth	Smooth	Smooth	Float	Float
Hardness in Kilograms (†)	34	50	70	55	(‡)	(‡)
Workability	1	4	5	2	3	6
Cost Factor Labor & Mat'l.	100	170	180	125	125	160

(†) Kilograms required to force a 10MM ball .01" into plaster face.

(‡) These are hard finishes but the aggregate in the surface does not permit an indication with this test.

FINISHING PLASTERS

LIME PUTTY—GAUGING (WHITE COAT) FINISH

DESCRIPTION

Hydrated Finishing Lime (or Finishing Quicklime) is soaked (or slaked) to putty consistency, blended in proper proportion with gypsum gauging plaster, and is trowelled to a smooth, hard finish usually over a properly prepared gypsum basecoat. This is by far the most widely used plaster finish coat due to ease of application, flexibility, whiteness and economy.

FUNCTION & UTILITY OF INGREDIENTS

LIMES:

The function of lime in a finish plaster is to provide the "spread" and plasticity to permit fast, easy application with full flexibility and economy. Lime does not "set," but hardens slowly; it likewise shrinks on drying. Therefore, gypsum gauging must be blended into the lime putty in proper proportion to provide initial set and strength, and to avoid shrinkage cracks.

IVORY—A double-hydrated (over 92%) special finishing lime that will not expand measurably in the wall. *Requires no soaking* to produce a smooth, uniform, white, highly plastic putty. May be mixed by adding dry lime and gauging to water in mechanical mixer because it develops its normal plasticity almost immediately. This is the preferred lime. Meets ASTM Designation C206-49 Type S and Federal Specification SS-L-351, Type F, including the added requirement of not more than 8% unhydrated oxides.

RED TOP and *GRAND PRIZE**—Shipped from *Genoa, Ohio*, are normal dolomitic hydrated finishing limes, and are only partially hydrated. They comply with Federal Specification SS-L-351, Type F, and ASTM Designation C6-49, Type N, but do not comply with specifications limiting the unhydrated oxides to 8 per cent.

RED TOP Hydrated Limes shipped from *Farnams, Massachusetts* and *New Braunfels, Texas*, are high calcium limes and are completely hydrated. They comply with ASTM C206-49 Type S and Federal Specification SS-L-351, and meet specifications limiting the unhydrated oxides to not more than 8 per cent.

All types of *USG** hydrated lime except "IVORY" Finish Hydrate require overnight soaking. They yield a smooth, highly plastic putty of exceptional purity. Until the advent of autoclaved hydrates, such as "IVORY," they were the standards of excellence.

RED TOP and *CHESHIRE* Brands—Are high calcium finishing quicklimes. When properly slaked and aged for

at least 48 hours, hydration is complete, (over 92%) thereby insuring against further hydration and attendant possibilities of expansion on the wall. Comply with ASTM Designation C5-26, and Federal Specification SS-Q-351. They have unusually high plasticity and purity.

GAUGING PLASTERS

1. *CHAMPION** and *STAR** are *White* Gauging Plasters, for blending with lime putty to provide initial set and strength. They are ground to the proper fineness to blend readily and completely, thus minimizing the danger of check-cracking, crazing, etc. when properly used. They give strength and hardness to the surface finish. *CHAMPION* has a quicker "set" than *STAR* Gauging Plaster. They are the preferred gauging plasters because of the extreme whiteness of the finish when used with limes of high purity.

Complies with ASTM Designation C28-40 "Calcined gypsum for finishing coat (white)" and Federal Specification SS-P-402, Type G.

2. *RED TOP Gauging* is a "local" gauging plaster, so called because it is made from a rock grade that is used in basecoat plasters. It is available with slow or fast "set." It is distinguished from *White* Gauging Plasters by its darker color. Except for color, *RED TOP* Gauging Plasters are the equal of *CHAMPION* and *STAR* Gauging Plasters.

Complies with ASTM Designation C28-40 "Calcined gypsum for finishing coat (gray)" and Federal Specification SS-P-402, Type G.

PROPORTIONING—See Specifications

LIMITATIONS OF USE

1. For interior application only.
2. Recommended proportioning must be observed. Failure to use sufficient gauging plaster, to blend thoroughly, or to trowel adequately often results in check-cracking, crazing, lack of hardness and bond failure.
3. Designed for normal humidity conditions. Where excessive humidity or frequent exposure to moisture is expected, use Keene's Cement as later described.
4. Designed for normal usage. If hardness, and resistance to abrasion is required, use Keene's Cement as later described.
5. Must be applied to gypsum or lime plaster basecoat. Lime-gauging bond to portland cement plasters is inadequate. Do not apply direct to masonry.

FINISHING PLASTERS

LIME PUTTY—GAUGING (WHITE COAT) FINISH—Continued

SPECIFICATIONS

Include the following in plaster specifications given on pages 4 to 7.

MATERIALS

Lime for finish plaster shall be (*select one*):

(IVORY Finish Hydrate Lime)

(RED TOP or CHESHIRE Finish Quicklime)

(RED TOP or GRAND PRI ζ E Finish Hydrate Lime)

manufactured by United States Gypsum Company.

Gauging Plaster shall be (*select one*):

(CHAMPION or STAR "White" Gauging Plaster)

(RED TOP "Local" Gauging Plaster)

manufactured by United States Gypsum Company.

MIXING AND APPLICATION OF FINISH PLASTER

Lime shall be thoroughly soaked (or slaked and aged) according to manufacturer's directions printed on containers. (*NOTE: IVORY Finish Hydrate requires no soaking or slaking.*) Mix in the proportions of 3 parts lime putty to 1 part of gauging plaster, by volume. The equivalent by weight shall be 2 parts dry lime to 1 part dry gauging plaster. Mixing shall be done on plasterer's board, thoroughly blending the gauging into the lime putty. When thoroughly mixed, it shall be applied to a surface-dry basecoat. Scratch in thoroughly and immediately double back to fill out to a true even surface. Thickness to be $\frac{1}{16}$ " to $\frac{1}{8}$ ". Trowel once before final set, and water trowel after set to provide dense surface for decoration. Brush with clean water only.

KEENE'S-LIME FINISH

DESCRIPTION

Keene's Cement is a high strength, white gypsum plaster. Keene's-Lime finish is composed of lime putty blended with Keene's Cement in proportions required to obtain desired hardness.

Complies with ASTM Designation C61-40 and Federal Specification SS-C-161, Type I (Regular) and Type II (Quick Troweling).

FUNCTION AND UTILITY

In addition to those listed for lime putty-gauging, it provides:

RESISTANCE TO ABRASION. Keene's Cement has exceptionally high strength and surface hardness. See Technical Data.

LOW WATER ABSORPTION. Keene's Cement, having a high density, has low water absorption.

CHOICE OF HARDNESS. Keene's Cement is mixed with lime putty in varying proportions for "hard" and "medium hard" finishes. See Technical Data and specifications.

TWO TYPES. Regular and Quick Troweling. Regular Keene's sets slowly, requires more troweling and may be used with any proportion of lime.

Quick Troweling Keene's sets faster, requires less troweling and must be used with a minimum of 25 lbs. of dry hydrated lime per 100 lbs. of Keene's Cement.

LIMITATIONS OF USE

1. Keene's Cement is for interior finishes only.

2. Keene's Cement finish is not recommended where exposure to water is extreme or continuous. Use portland cement-lime plaster.

3. For application over gypsum basecoats of high compressive strength only.

SPECIFICATIONS

The following should be included in plaster specifications given on pages 4 to 7.

MATERIALS

Keene's Cement shall be (Regular Keene's Cement) (Quick Troweling Keene's Cement) manufactured by United States Gypsum Company.

Lime—(Refer to Lime Gauging Specifications, above, and select one).

MIXING AND APPLICATION

This specification should be exactly as given for Lime-Gauging, except that Keene's Cement should be substituted for Gauging Plaster and the proportioning should be changed to one of the following:

FINISHING PLASTERS

KEENE'S—LIME FINISH—MIXING AND APPLICATION CONTINUED

1. "Medium Hard" Finish shall be mixed in the proportion of 50 lbs. of dry hydrated lime to 100 lbs. of Keene's Cement. This proportion is approximately 100 lbs. of lime putty to 100 lbs. of Keene's Cement, or 35 qts. of lime putty to 100 lbs. of Keene's Cement.

2. "Hard" Finish shall be mixed in the proportion of 25 lbs. of dry hydrated lime to 100 lbs. of Keene's Cement. This proportion is approximately 50 lbs. of lime putty to

100 lbs. of Keene's Cement, or 17 qts. of lime putty to 100 lbs. of Keene's Cement.

3. *Keene's Lime-Sand Float Finish* shall be mixed in the proportion of 50 lbs. of dry hydrated lime, 100 lbs. of Keene's Cement and 400 lbs. of sand. This proportion is approximately 100 lbs. of lime putty, 100 lbs. of Keene's Cement and 400 lbs. of sand, or 35 qts. of lime putty, 100 lbs. of Keene's Cement and 4 to 5 cu. ft. of sand (26 No. 2 shovels of sand).

PREPARED GYPSUM FINISHES

RED TOP GYPSUM TROWEL FINISH and RED TOP GYPSUM SAND FLOAT FINISH

DESCRIPTION

RED TOP Trowel and Sand Float finishes are mill-prepared gypsum finish coat plasters requiring the addition of water only.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

RED TOP GYPSUM TROWEL FINISH—is used where hard, smooth surfaces are desired.

RED TOP GYPSUM SAND FLOAT FINISH—is used where a quality float finish is desired.

STRENGTH—approximately twice the strength of ordinary lime-gauging finishes.

EARLY DECORATION—may be painted as soon as set and dry.

FACTORY PREPARED—mill selection of ingredients and formulation insure uniform results and avoid variations possible with job mixing.

NON-ALKALINE—contain nothing injurious to paint or decorations.

BOND—provides durable and natural bond to gypsum basecoat.

COST—slightly higher than job-prepared finishes.

LIMITATIONS

1. Designed for application over gypsum basecoats only.
2. Should not be used on exterior surfaces where exposed to the elements or on interiors exposed to excessive moisture.

PLASTERING SPECIFICATIONS

The following should be included in Plastering Specifications:

Finish Coat shall be (RED TOP Gypsum Trowel Finish) or (RED TOP Gypsum Sand Float Finish) manufactured by United States Gypsum Company.

MIXING AND APPLICATION

Finish Coat—Prepared gypsum finish shall be mixed with water only in strict accordance with the manufacturer's directions.

Include whichever of the following paragraphs is applicable:

RED TOP Gypsum Trowel Finish shall be applied in 2 coats to a total thickness of not more than $\frac{1}{8}$ " over a set, half-green gypsum basecoat. Scratch in a thin coat and double back with a second coat, filling out to a true and even surface. Trowel to a smooth finish free of cat faces and other blemishes. Use water sparingly during troweling.

RED TOP Gypsum Sand Float Finish shall be applied in 2 coats to a total thickness of not more than $\frac{1}{8}$ " over a set, half-green gypsum basecoat. If the basecoat has dried out, it shall be sprayed with water, but not soaked, before the finish coat is applied. Scratch in a thin coat and double back with a second coat, filling out to a true and even surface. Float with a suitable tool to give a surface free from slick spots, cat faces and other blemishes. Use water sparingly while floating.

FINISHING PLASTERS

RED TOP COVER COAT FINISHING PLASTER

DESCRIPTION

RED TOP Cover Coat is a mill prepared white gypsum bonding-finishing plaster requiring the addition of water only.

FUNCTION AND UTILITY

RED TOP Cover Coat is a specially prepared finishing plaster designed to furnish an adhesive bond for application direct to smooth unpainted concrete (to which application of Boncrete is not suited) and provide a finish surface ready for decoration.

Application specifications provide for one coat work, which is most economical and provides customary finish appearance; and two coat work, which provides a superior finish appearance. If sand coat finish is desired, it must be two coat work.

LIMITATIONS

1. For interior application only.
2. Not recommended for application on exterior masonry walls.
3. Not designed for use on surfaces which are exposed to excessive humidity or where frequent exposure to water is expected.
4. Unprotected steel in surface of concrete may result in rust spots on Cover Coat, requiring subsequent decoration.
5. As a finishing plaster it is designed for application in a total thickness not to exceed an average of $\frac{1}{8}$ of an inch.

SPECIFICATIONS

The following shall be included in the plastering specifications.

MATERIALS

Finish plaster over (smooth concrete ceiling, columns or beams) (specify) shall be RED TOP Cover Coat as manufactured by United States Gypsum Company.

MIXING

Mix RED TOP Cover Coat with warm water only (except for final coat where sand float finish is desired, the addition of $1\frac{1}{2}$ parts silica sand to one part Cover Coat by weight is permissible). All surfaces to receive Cover Coat shall be properly prepared as specified elsewhere.

APPLICATION (Choose one of following methods:)

- a. Cover Coat shall be applied in one coat over a properly prepared and dry concrete surface by scratching in a thin coat completely covering the concrete; doubling back with a thin coat and levelling out the surface with light trowelling. When it has taken up, trowel with water to a smooth level surface. Total thickness not to exceed an average of $\frac{1}{8}$.
- b. Cover Coat shall be applied in two coats over a properly prepared surface. The first coat shall be applied to a dry surface in sufficient thickness to cover and embed the surface imperfections, and trowel level to receive the second coat. Over set dry first coat apply the second coat as thin as possible and after it takes up trowel with water to a smooth finish (if sand float finish, float to smooth even texture). Total thickness shall not exceed an average of $\frac{1}{8}$.

SURFACE PREPARATION

Over unpainted concrete remove all laitance and efflorescence by dry brushing and scrub surface with naphtha or mineral spirits to remove grease and form oil. Then brush or spray surface with 5% solution of Cover Coat Bonder in water to "neutralize" surface alkalinity and allow to dry.

Patch holes and surface defects with paste of Cover Coat.

ORIENTAL* INTERIOR (COLORED) FINISHES

DESCRIPTION

ORIENTAL Interior Finish is a mill-prepared and colored finish plaster requiring the addition of water only.

There are no ASTM or Federal Specifications covering this type of plaster.

FUNCTION AND UTILITY

INTEGRALLY COLORED at factory, requiring no decoration. Permits early occupancy. Avoids variations of color intensity that are possible when colors are mixed at site.

COLORS (with LIGHT REFLECTION for float finish). White—81%; Sahara Cream—74.6%; Ivory—77.5%; Tusk Ivory—72.7%; Harvest Buff—66.6%; Parchment—74.2%; Golden Buff—70.1%; Mist Gray—63.9%; Caenstone—51.4%; Shell Pink—64.8%; Desert Rose—56.2%; and Cool Green—67.4%.

TEXTURE—A finely floated surface or a textured finish—in 13 colors.

STRENGTH—highly resistant to abrasion due to very great hardness. See Technical Data, Page 8.

LIMITATIONS OF USE

1. ORIENTAL Interior is for producing finely floated surfaces or textures. Do not use for a smooth finish.
2. To be used on interiors only.

SPECIFICATIONS

The following should be included in plaster specifications given on pages 4 to 7.

MATERIALS

Finish Coat shall be ORIENTAL Interior Finish, manufactured by United States Gypsum Company. Color shall be as selected by the architect from schedule of colors furnished by manufacturer.

MIXING AND APPLICATION

Finish Coat—ORIENTAL Interior Finish shall be mixed with water only in accordance with the manufacturer's directions.

ORIENTAL Interior Colored Finish shall be applied over a set and half-green gypsum basecoat. (Select one of following):

Float Finish—Scratch in a thin coat and double-back with a second coat, filling out to a true and even surface. Surface shall be floated with a cork float to give a surface free of slick spots, cat faces and other blemishes. Do not use water while floating.

Texture Finishes—Textures shall be applied in such a manner that they will match the sample approved by the architect or his representative.

*Trademark Reg. U. S. Pat. Off.

FINISHING PLASTERS

SABINITE* ACOUSTICAL PLASTER FINISHES

SABINITE TROWEL FINISH "M"

DESCRIPTION

SABINITE Trowel Finish is a highly efficient acoustical plaster, scientifically prepared to produce a continuous *trowel finish* of exceptional sound absorbent qualities. It is manufactured in four standard colors and white and requires the addition of water only. Basically mineral, it is incombustible.

SABINITE FLOAT FINISH "F"

DESCRIPTION

SABINITE Float Finish is a highly efficient acoustical plaster which provides a *float finish* effect. Having a harder surface than SABINITE trowel finish, it is more suitable for side walls which require sound conditioning. It is

manufactured in four standard colors and white and requires the addition of water only.

SABINITE 38

DESCRIPTION

SABINITE 38 is an hydraulic acoustical plaster prepared for use in locations subjected to high moisture conditions. It is manufactured in white only, and provides a *float finish*.

SABINITE 38 is effective for sound conditioning in shower rooms, for ceilings in swimming pools, etc.

LIMITATIONS (All Types)

1. Designed for use on ceilings and areas not exposed to rough usage.
2. To insure best results, SABINITE must be applied in strict accordance with manufacturer's directions.
(See AIA File 39-B for complete Technical Information and Specifications.)

EXTERIOR STUCCO FINISH

ORIENTAL* EXTERIOR (COLORED) FINISHES

DESCRIPTION

ORIENTAL Exterior Finish is a factory-prepared stucco for exterior application over a portland cement-lime basecoat. It requires the addition of water only on the job.

Colors: Pewter Gray, Eggshell Ivory, Sun Tan, Stone Gray, Copper Rose, Alamo Buff, Mission Green, Cascade Green, Pueblo Tan, Indian Coral, Rancho Brown and White.

FUNCTION AND UTILITY

FACTORY PREPARED—Uniformity in formulation insures endurance under all weather conditions. Avoids possibility of job-mixing errors.

INTEGRAL COLORING—Prevents variations possible where colors are added at site.

DECORATION—Requires none.

ADAPTABLE to any texture.

LIMITATIONS

1. Not designed for use as a smooth trowel finish.
2. Requires a portland cement-lime basecoat.

PLASTERING SPECIFICATIONS

GENERAL PROVISIONS

When exterior stucco is applied during cold weather, longer curing periods are necessary. In freezing weather, do not apply ORIENTAL Exterior Stucco unless special precautions are taken to keep the materials at a temperature above 50°F. during mixing and for at least 48 hours after application.

SCOPE

Unless otherwise shown on drawings, all exterior walls shall be finished as herein described.

MATERIALS

Exterior finish coat shall be ORIENTAL Exterior colored finish as manufactured by the United States Gypsum Company. Color and texture to be designated and approved by the architect or his representative.

MIXING AND APPLICATION

ORIENTAL Exterior colored finish shall be mixed and applied in strict accordance with the manufacturer's directions.

*Trademark Reg U. S. Pat. Off.

EXTERIOR STUCCO BASECOAT

DESCRIPTION

Exterior stucco basecoat is prepared on the job from portland cement, lime, sand and water and is the basecoat that receives the ORIENTAL* Exterior (colored) Finish.

FUNCTION AND UTILITY

Exterior stucco basecoat is used for the scratch (first coat) and brown (second coat) over cement block or clay tile, or over sheathing to which STUCCO MESH or self-furring metal lath has been properly applied.

FIRE RESISTANT—Made from portland cement, lime and sand, it will not support combustion.

WEATHER RESISTANT—Suitable for normal exposure to climatic variations.

STRONG—Properly mixed and cured, it provides a dense, hard base that will withstand normal wear and usage.

ECONOMICAL—Use of standard, readily available materials provides a low cost basecoat.

LIMITATIONS OF USE

1. Because of the use of portland cement, each coat required curing with water after set.
2. Must not be applied in freezing weather or over bases containing frost.
3. Must not be used on smooth, dense surfaces or over old, unsound stucco unless stucco mesh reinforcement is first properly applied.

SPECIFICATIONS

(Note to Architect: The following specifications may be adapted to your requirements for interior portland cement-lime plaster.)

SCOPE

Unless otherwise specified or shown on the drawings, all exterior walls shall have a portland cement-lime stucco basecoat.

MATERIALS

Reinforcing mesh (where required) shall be USG STUCCO MESH applied with stucco furring nails or USG 3.4 lb. Self-Furring Diamond Mesh Metal Lath, applied with $1\frac{1}{2}$ " 11 gauge galvanized roofing nails. Nails to be spaced not over 6" on center vertically and 16" on center horizontally.

PORTLAND CEMENT—Shall comply with A.S.T.M. Designation C150-47.

LIME—Shall be MORTASEAL or RED TOP Masons Hydrate Lime or Quicklime as manufactured by the United States Gypsum Company.

SAND—Shall be clean and sharp and shall meet the requirements of American Standards Association specifications A-12-2.

WATER—Shall be clean, free from harmful quantities of organic matter and fit for domestic consumption.

FINISH—Shall be ORIENTAL Exterior (colored) Finish as manufactured by the United States Gypsum Company.

MIXING OF BASECOATS

The scratch (first coat) shall be mixed in the proportion of one bag of portland cement (one cubic foot); two bags of MORTASEAL (or two cubic feet of RED TOP Masons Lime Putty) and seven and one-half cubic feet of sand (approximately 45 No. 2 shovels). For application over stucco mesh or self-furring metal lath, approximately two pounds of fiber or hair shall be added to each mix of the above proportions.

The brown coat (second coat) shall be mixed in the proportion of one bag of portland cement, two bags of MORTASEAL (or two cubic feet of RED TOP Masons Lime Putty) and nine cubic feet of sand (approximately 55 No. 2 shovels).

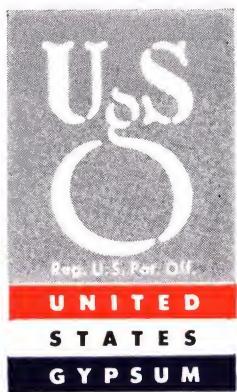
APPLICATION

Scratch coat shall be applied in a full $\frac{3}{8}$ " coat, with sufficient pressure to form a good bond with masonry surfaces or to force it through and completely embed the stucco mesh. Cross scratch and, after set, damp cure for not less than 48 hours.

Brown coat shall be applied over the dampened scratch coat in a full $\frac{3}{8}$ " coat with sufficient pressure to form a good bond, rodded level and left rough, using a broom if necessary. After set, damp cure for at least 48 hours before applying the finish (third) coat.

CURING

Damp curing of each coat shall be accomplished by applying water in a fine, fog spray. Apply only as much water as is readily absorbed. The frequency of spraying required will depend on the weather exposure, more frequent applications being required during hot, dry and windy weather.



TECHNICAL INFORMATION

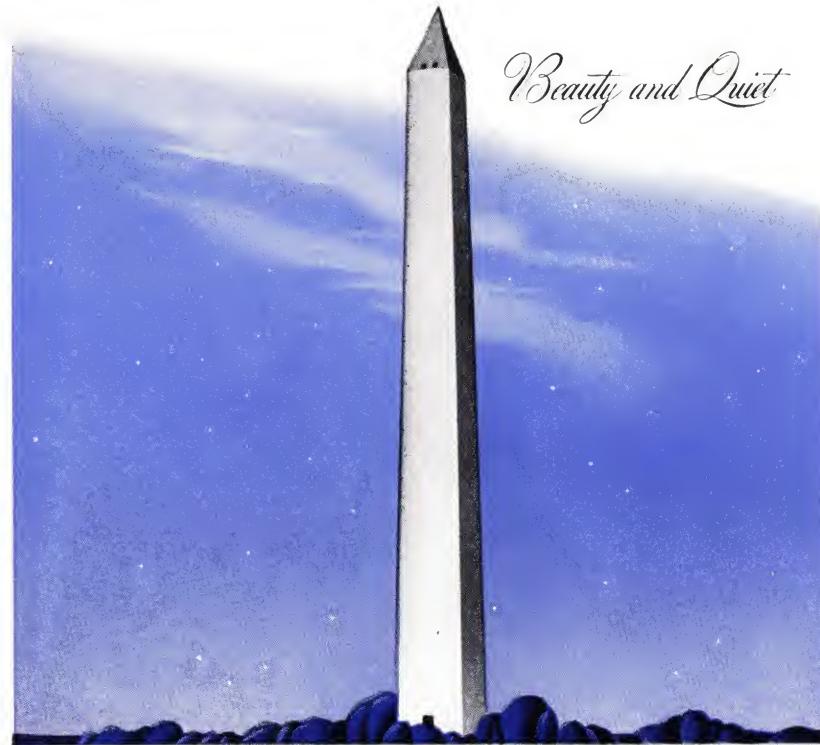
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CONTENTS

	<i>Page</i>
ACOUSTONE "F", Acoustical Tile	
Description	3
Function and Utility	3
Limitations of Use	3
Design Data	5
Technical Data	5
Installation Methods	6-7
Specifications	7
Details	8-12
MOTIF'D ACOUSTONE, Acoustical Tile	
Description	13
Function & Utility	13
Specifications	13
Designs	13-18
AUDITONE, Acoustical Tile	
Description	19
Function & Utility	19
Technical Data	19
Installation Methods	20
Specifications	20
Details	21
PERFATONE, Acoustical Units	
Description	23
Function & Utility	23
Limitations of Use	23
Specifications	23
Details	22
AUTHORIZED APPLICATORS	
	24

"ACOUSTONE", "AUDITONE", "MOTIF'D", "TEXOLITE", "USG", "RED TOP", "ROCKLATH", "SHEETROCK", and "PERFATONE" mentioned in this publication are registered trademarks owned by United States Gypsum, and are used by it to distinguish its products.

"ACOUSTONE" as used herein identifies the particular mineral acoustical tile;
"AUDITONE" as used herein identifies the particular wood fiber acoustical tile;
"MOTIF'D" as used herein identifies the particular mineral acoustical tile with decorated surface;
"TEXOLITE" as used herein identifies the particular paint;
"USG" as used herein identifies the particular sheathing and sound insulation;
"RED TOP" as used herein identifies the particular plaster;
"SHEETROCK" as used herein identifies the particular gypsum wallboard;
"ROCKLATH" as used herein identifies the particular gypsum lath or plaster base;
"PERFATONE" as used herein identifies the particular perforated metal acoustical tile; all manufactured only by United States Gypsum.

ACOUSTONE* "F" ACOUSTICAL TILE

DESCRIPTION

ACOUSTONE "F" mineral acoustical tile is manufactured by binding mineral fibers into a light-weight, highly sound-absorbent tile form. The fissured surface closely resembles that of Travertine marble. No two tiles are identical in texture; the pattern is as natural as the veining of fine marble or the grain of wood. Each tile is finish-painted at the factory and is available with accurately formed bevel or square edges. For sizes, etc., see Technical Data Page 5.

FUNCTION AND UTILITY

ACOUSTONE "F" combines high sound absorption with in-combustibility in a product of decorative versatility that fits into the architectural scheme as an inconspicuous surface or as the dominant note in the decoration.

High Sound Absorption

Made in two thicknesses, ACOUSTONE "F" provides Noise Reduction Coefficients of .65 and .70. For auditorium use, the absorption at 512 cycles per second is .76 and .85. In both thicknesses the absorption for the higher pitched sounds, which are considered most annoying, is maintained at a high level to produce more effectiveness. (See Technical Data Page 5.)

Fire Resistance

ACOUSTONE "F" serves to retard the spread of fire. It is rated as *incombustible* by the National Bureau of Standards.

Splined for Good Alignment

All square edge ACOUSTONE "F" (no bevel) is kerfed for splines and "back-cut" on all edges to provide tight, inconspicuous joints (see page 4). The surfaces of adjacent tile are held level by the splines and accurate kerfing. The "back-cut" assures closed joints on wavy ceilings. Butted conventional square edge joints that are 1-32" to 1-16" out of level cause conspicuous shadows which are exaggerated when lighting fixtures are close to the ceiling line. Concealed splines and "back-cut" minimize this "out-of-level" appearance.

Colors

ACOUSTONE "F" is painted at the factory with a full finish coat of a high grade resin emulsion paint (IMPERIAL TEXOLITE*) on the face and exposed bevels in white or ivory; other standard colors shown on the current USG TEXOLITE color selector are obtainable on special order.

Texture

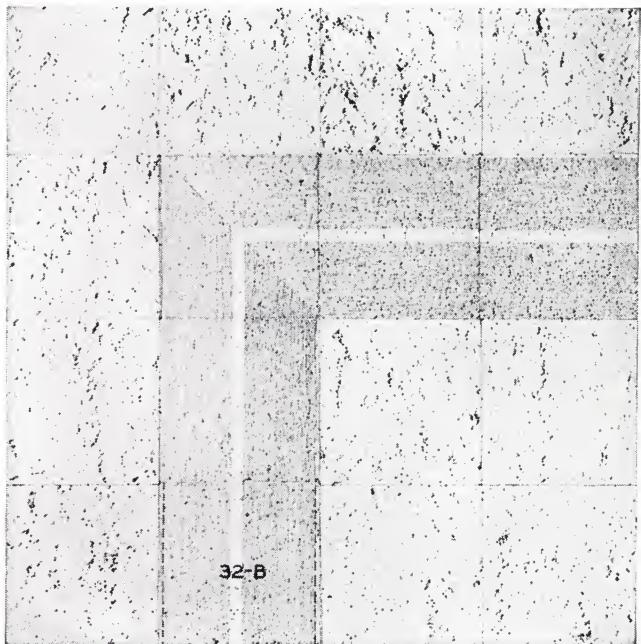
ACOUSTONE "F" is furnished in one texture range only. (See page 15, for special texture on MOTIF'D* ACOUSTONE "F".)

Weight

From years of experience we recommend that acoustical tile cemented on ceilings should weigh no more than 1.75 lbs. per square foot. ACOUSTONE "F" weights do not exceed this. (See Technical Data Page 5.)

Washability

Factory-painted ACOUSTONE "F" may be washed with water and a sponge or cleaned with putty or paste type wall-paper cleaner. Accidental spotting or soiling can usually be removed by this method before over-all redecoration is necessary.



Standard Square Edge ACOUSTONE "F" with MOTIF'D Border

Resistance to Soiling and "Breathing"

The smooth, hard, painted finish of ACOUSTONE "F" resists soiling and minimizes objectionable air travel through the tile proper.

Paintability

Authoritative tests show that ACOUSTONE "F" may be brush or spray painted many times without loss of sound absorption at 512 cycles per second or in the *Noise Reduction Coefficient*. The effect of repeated coats of paint on ACOUSTONE "F" and other materials may be found in Research Paper RP-1298 "Effect of Paint on Sound Absorption of Acoustical Materials," which is obtainable from National Bureau of Standards, U. S. Department of Commerce, Washington, D. C. Oil, casein, resin emulsion or calcimine types of paint may be used according to normal paint procedures for interior pre-decorated surfaces.

High Light Reflection

ACOUSTONE "F" in standard white finish has a light reflection of 80%; standard ivory, 72%.

Rodent and Vermin Resistance

ACOUSTONE "F", essentially of mineral composition, is highly resistant to rodents and vermin.

Heat Conductivity

The low thermal conductivity of ACOUSTONE ("k" factor = .35) adds heat insulation to top floor ceilings and exterior walls.

LIMITATIONS OF USE

ACOUSTONE "F" mineral acoustical tile is designed for normal moisture conditions. It is not recommended in dish-washing rooms or where it will be exposed to steam or constant high humidity.

It should not be used below wainscot height or where it will be subjected to severe impact or abrasion.

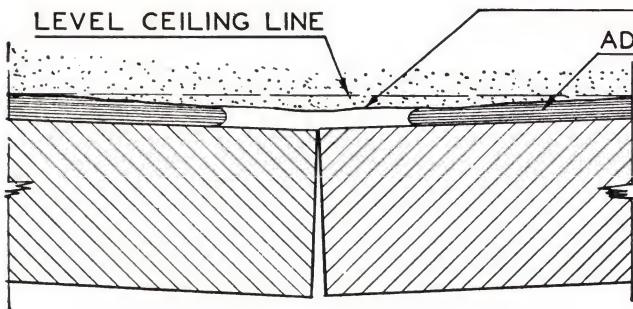
ACOUSTONE "F"



Bevel ACOUSTONE "F"—Conventional joints

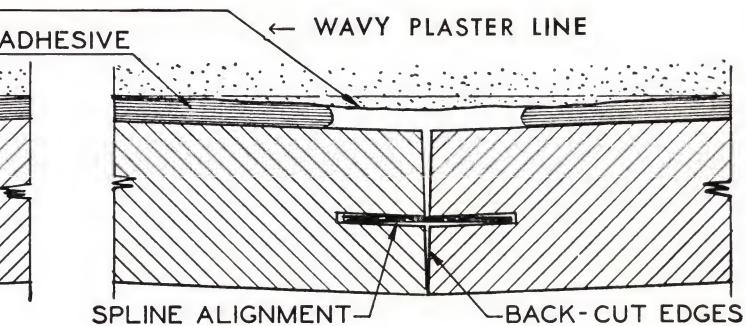


Square Edge ACOUSTONE "F"—inconspicuous joints



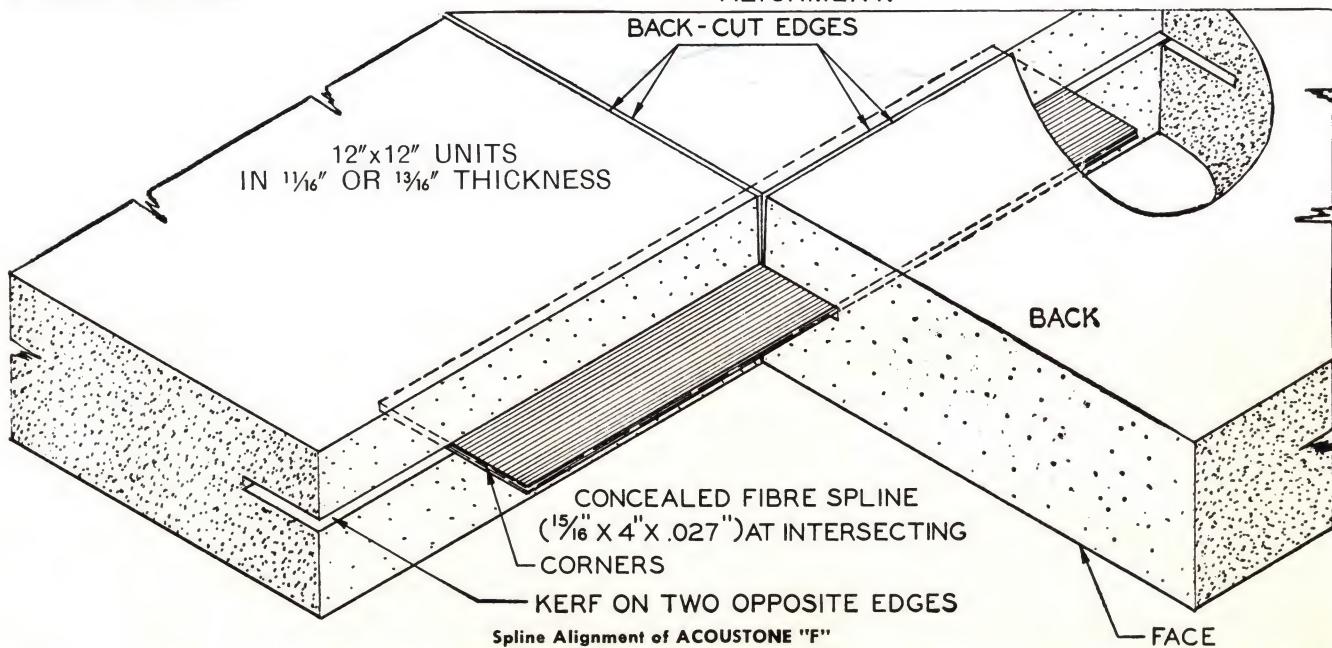
OLD TYPE SQUARE EDGE

PRODUCES OPEN AND OFFSET JOINTS OVER
A WAVY CEILING.



NEW TYPE SQUARE EDGE

PRODUCES TIGHTER JOINTS IN CLOSER
ALIGNMENT.



ACOUSTONE "F"

TECHNICAL DATA

SOUND ABSORPTION COEFFICIENTS																						
Acoustical Materials Association							Bureau of Standards (LC-714 Jan. 1943) Federal Specifications are Based on Bureau of Standards Tests															
Mounting	Thickness	Coefficients					Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	Mounting	Thickness	Coefficients					(SS-A-118a) Feb. 12, 1948						
		128	256	512	1024	2048					128	256	512	1024	2048	4096						
1	11/16"	.08	.25	.76	.84	.78	.73	.65	1.35	1	11/16"	.07	.22	.75	.92	.82	.81	.70	1.13	104	5	III
1	13/16"	.08	.24	.85	.87	.74	.75	.70	1.56	1	13/16"	.14	.31	.86	.87	.78	.77	.70	1.33	102	5	III
2	13/16"	.10	.39	.79	.80	.78	.75	.70	1.56	8	13/16"	.34	.75	.71	.72	.79	.77	.75	1.31	105	4	III
7	7/8"	.38	.60	.64	.74	.78	.74	.70	1.68													

Tile tested were painted with a full finish coat of paint.

Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings.

Mounting No. 2—Nailed to 1" x 3" wood strips 12" O. C.

Mountings Nos. 7 and 8—attached to metal supports on metal Suspension system.

Light Reflection:
ACOUSTONE "F" White (1) 80%
ACOUSTONE "F" Ivory (1) 72%
MOTIF'D ACOUSTONE White 78%
(1) Tests by Official A.M.A. Laboratory.

Heat Conductivity—k = .35
Fire Resistance—Incombustible.
Authority: Bureau of Standards (LC-715, January, 1943).

DESIGN DATA

THICKNESS	SIZES	EDGE	INSTALLATION, KERFING, BACK-CUT, AND CENTERSCORING
11/16"	6"x12" 12"x12" 12"x24"	Bevel or Square	Installation: <i>Adhesive only recommended.</i> Square edge units in 6" x 12", 12" x 12", and 12" x 24" kerfed (for .027" thick, 15/16" wide by 4" long splines) and back-cut. No kerfing for mechanical erection. No centerscoring.
13/16"	6"x12" 12"x12" 12"x24"	Bevel or Square	Installation: <i>Adhesive, Mechanical Erection or nailed direct to wood strips.</i> 1. <i>Adhesive Application:</i> Square edge units in 6"x12", 12"x12" and 12"x 24" kerfed (for .027" thick, 15/16" wide by 4" long splines) and back-cut. No centerscoring. 2. <i>Nailing to Wood Strips</i> (no adhesive used)—Only bevelled units (12" x 12" and 12" x 24"). Centerscoring available on 12" x 24" when specified. Units kerfed for .027" thick, 15/16" wide by 4" long splines.
7/8"	12"x24"	Bevel or Square	3. <i>Mechanical Erection:</i> "Zee-Spline Method"—Bevelled or square edge units (12" x 24"). Centerscoring available when specified. Units kerfed and rabbeted. "Clip-Spline Method"—Only bevelled units (12" x 24"). Centerscoring available when specified. Units kerfed and rabbeted.

NOTE: All units that are to be applied with adhesives can be furnished upon request with bevels on one or more edges, the remaining edges left square. This allows creation of special patterns and border effects.

ACOUSTONE "F"

INSTALLATION METHODS

ACOUSTONE "F" mineral acoustical tile is installed by *approved USG acoustical contractors* by one of three methods:

- I. Application with adhesive. (With or without nailing).
- II. Nailing directly to wood strips through concealed fiber splines. (No adhesive).
- III. Mechanical methods.

Each of these methods has individual advantages which fit it for specific types of construction.

I. ADHESIVE APPLICATION (All thicknesses)

Application with adhesive is the most widely used method and is recommended where a suitable base exists.

Adhesive

See Architectural Specifications page 7 for description and amount of adhesive recommended.

Size of Units

Should not exceed 12" x 12" for ceilings or 12" x 24" for walls.

BASES FOR ADHESIVE APPLICATION OF ACOUSTONE

1. New Plaster. A full thickness of rodded brown coat gypsum plaster in a clean, dry, level state provides an excellent base.

2. New Lime Putty Finish. Since the presence of free lime in a new finish may cause saponification of oils and resins in the adhesive, a combination of adhesive and nailing is recommended.

3. Old Lime Putty Finish. An old lime putty finish (in place over one year) offers a good base if the finish is well bonded to the base coat of plaster. Loose areas should be scaled off and patched with RED TOP* Patching Plaster.

4. Painted Plaster. A good quality of oil paint well bonded to the plaster and in place not less than 6 months will generally give excellent results. Oil in paints will oxidize sufficiently in 6 months so that it will not be objectionably softened by the naphtha thinner in adhesives. Units can also be successfully cemented directly to resin emulsion, casein or calcimine painted surfaces if they are well bonded to the base. Calcimine over a good varnish size or paint will generally give good results.

CAUTION: Calcimine over hard oil (sometimes called gloss oil) size is an unsatisfactory base. In this case a combination of nailing and adhesives must be used. The acoustical contractor will know by job testing when to augment the adhesive with nailing.

5. Undecorated Concrete. The concrete slab should be dry, clean and free of any sharp vertical offsets of more than $\frac{1}{8}$ " (caused by forms out of level). Where concrete slabs have localized areas containing a surface film of loose cement dust, a proper size (spray or brush application) should be applied be-

fore application of acoustical units.

Acoustical units should not be applied with adhesive directly to non-insulated concrete roof slabs during extremely hot weather (over 105° F.) since the adhesive will be subjected to objectionable softening during the first 3 to 5 weeks. After this time the adhesive will withstand this high temperature. In questionable cases, consideration should be given to other methods of application.

6. Painted Concrete. Nailing of units is not possible when they are cemented directly to a concrete surface. The success of the job is therefore dependent on the quality of the paint and its bond to the slab. Unless this can be predetermined, other methods of application should be considered. (See No. 4 above).

7. USG Gypsum Board Nailed to Wood Strips. ACOUSTONE "F" can be successfully cemented to SHEETROCK* wallboard or plain ROCKLATH* plaster base (not perforated) or USG sheathing. Where gypsum boards are nailed directly to wood, SHEETROCK wallboard or USG sheathing furnishes a better base than ROCKLATH for application of acoustical units with adhesive. No sizing of the SHEETROCK, sheathing or ROCKLATH is required if adhesives conforming to architectural specifications, page 7, are used. The joints and openings in the SHEETROCK, sheathing or ROCKLATH should be sealed with the adhesive used to erect the tile (applies only where gypsum boards are nailed to wood). ROCKLATH without a scratch and brown coat of gypsum plaster should not be used where exposed to excessive moisture or humidity. Gypsum boards less than $\frac{3}{8}$ " thick should not be used. Standard sizes of SHEETROCK, sheathing and ROCKLATH are shown in the table below.

8. Metal Suspension of Gypsum Board. Where combustible wood furring is not permitted, metal clips are available for attaching ROCKLATH plaster base to $\frac{3}{4}$ " suspended channels 16" on center. ACOUSTONE may be applied to the ROCKLATH with adhesive as shown on page 9 but a preferred, alternate construction, giving additional rigidity, strength and fire protection is obtained by applying full base coats of gypsum plaster to the ROCKLATH before applying the ACOUSTONE. When base coat plaster is omitted the joints and openings in the ROCKLATH should be sealed with *unsanded wood fibre gypsum plaster* to obtain greater rigidity and seal against air travel. It should be applied approximately $\frac{1}{16}$ " thick and 2" wide in a continuous ribbon over all joints and at wall angles.

CAUTION: The use of ROCKLATH without plaster is not recommended where job conditions, particularly moisture conditions, are unsuitable. Accordingly, ACOUSTONE shall be applied to such suspension only when the installation of the base is made under the supervision of and to the satisfaction of the USG acoustical contractor.

TRADEMARK	STANDARD SIZES			Approx. Wt. Per Sq. Ft.	Spacing of 1" x 3" Wood Strips	Approx. Spacing of Nails
	Thickness	Width	Lengths			
SHEETROCK (Plain)	$\frac{1}{2}$ "	48"	7', 8', 10', 12;	2.1 lb.	16" to 24"	7"
SHEETROCK (Plain)	$\frac{3}{8}$ "	48"	7', 8', 10', 12;	1.6 lb.	16"	7"
USG SHEATHING	$\frac{1}{2}$ "	24"	8' 0"	2.1 lb.	16" to 24"	8"
ROCKLATH (Plain not Perf.)	$\frac{3}{8}$ "	16"	48"	1.6 lb.	16"	4"

Nails: Use $1\frac{1}{8}$ " blued plaster lath nails for either thickness board.

Do not exceed spacings of supports shown in the table and do not use gypsum board less than $\frac{3}{8}$ " thick.

*Trademarks Reg. U.S. Pat. Off.

ACOUSTONE "F"

9. Wood. Adhesive application of ACOUSTONE "F" directly to wood strips or plywood without nailing has not proven very successful because of green wood and the tendency of wood to warp. Tile should be securely nailed with finish nails after application with adhesives.

10. Miscellaneous Surfaces. Follow the recommendations of approved acoustical contractors for surfaces not listed.

II. NAILING DIRECTLY TO WOOD STRIPS THROUGH CONCEALED FIBER SPLINES (No Adhesives Used).

Use only $1\frac{3}{16}$ " x 12" x 24" beveled ACOUSTONE "F." See drawing on page 10.

III. MECHANICAL SUSPENSION METHODS.

(a) Clip Spline Method (See drawing Page 11).

Use ACOUSTONE "F" $\frac{7}{8}$ " x 12" x 24" with beveled edges and centerscored to simulate 12" x 12" units. Tee splines and clips

together form a free floating construction suspended from the $\frac{3}{4}$ " channels. The clip allows the $\frac{3}{4}$ " channels to move in any direction without transferring sufficient stress to the acoustical units to open joints.

(b) Zee Spline Method (See drawing Page 12).

Use ACOUSTONE "F" $\frac{7}{8}$ " x 12" x 24" size with beveled or square edges. This method eliminates the $\frac{3}{4}$ " channels and offers an economical, simple, rigid construction. It permits the use of flush joint ACOUSTONE where lighting conditions are not too severe.

Both suspension methods have metal splines in kerfs along the four edges of each unit which support the tile. They also act as a continuous seal to minimize air travel through the joints. Self leveling of tile joints is assured since intersecting corners of four adjacent units are supported on the same member.

The heavily pigmented finish-paint on ACOUSTONE "F" creates high resistance to objectionable air travel through the tile.

ARCHITECTURAL SPECIFICATIONS FOR ACOUSTONE "F" (CEMENTED OR NAILED INSTALLATIONS)

(Phrases in parentheses are explanatory)

1. Scope. (List and locate all areas to receive acoustical treatment.)

2. Materials. Acoustical material shall be ACOUSTONE "F" manufactured by the United States Gypsum Company having a (Noise Reduction Coefficient of 65 or 70) (sound absorption coefficient of . . . at 512 cycles per second) as tested by A. M. A. Laboratories; shall be composed of mineral fibers manufactured into tile units with a fissured surface; shall be capable of being brush painted repeatedly with oil paints without loss of sound absorption at 512 frequency or noise reduction coefficient; shall be rated "incombustible" by National Bureau of Standards; shall be finish painted on the exposed surface and bevels (state color) with washable paint and have a light reflection coefficient not less than 80% for white (or 70% for ivory), as tested by A.M.A. Laboratories.

(a) (Use when units are applied with adhesive). (Choose 1 or 2 following.)

(1) Units shall be 12" x 12" with square edges and shall have edges kerfed to permit leveling with concealed splines. Units shall weigh no more than $1\frac{3}{4}$ lbs. per square foot.

(2) Units shall be 12" x 12" with $\frac{1}{8}$ " beveled edges. Units shall weigh no more than $1\frac{3}{4}$ lbs. per square foot.

The adhesive shall be of a type manufactured expressly for the purpose; shall not be water soluble, shall not contain ingredients that react chemically with paint, or a solvent that has a stronger solvent action on an oil paint than naphtha; it shall contain no alcohol.

(b) (Use when units are nailed directly to wood furring strips without cement.) Units shall be $1\frac{3}{16}$ " x 12" x 24", with beveled edges, and centerscored to simulate 12" x 12" units, and kerfed to receive fiber splines.

3. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer.

(a) (Use when units are applied with adhesive). Acoustical units shall be securely cemented in place to a (state base as recommended

on page 6). Not less than 4 spots of adhesive averaging not less than $2\frac{1}{2}$ " diameter in direct contact with the tile and the surface to which it is applied shall be used per square foot of tile. Spots shall have a minimum diameter of 2". Tile shall be laid in a (state pattern as square or diagonal or detail design), with edges in alignment. (Use following when square edge units are specified.) Concealed splines shall be accurately fitted into the kerfs in the edges of the units so that there will be a spline at the junction of 4 abutting units and engaging the corners of all 4 units. Border units shall be scribed to neatly fit abutting surfaces.

(b) (Use when units are nailed directly to wood furring strips. Only $1\frac{3}{16}$ " beveled units are recommended.) Units shall be securely attached to 1" x 3" wood furring strips spaced 12" on center, by face-nailing through the tile and concealed fiber splines placed into kerfs at edges of units with 3d or 4d finish nails countersunk slightly below the face of the tile. Necessary framing and anchorage for support of furring strips (shall, shall not) be a part of this work. Border units shall be neatly scribed to abutting surfaces.

MECHANICAL SUSPENSION, "ZEE-SPLINE METHOD AND CLIP-SPLINE METHOD."

Note: Use Paragraphs 1, and 2, from above specification except material shall be $\frac{7}{8}$ " x 12" x 24" beveled edge for Clip-Spline Method (either beveled or square edge for Zee-Spline Method), kerfed and rabbeted to receive suspension members.

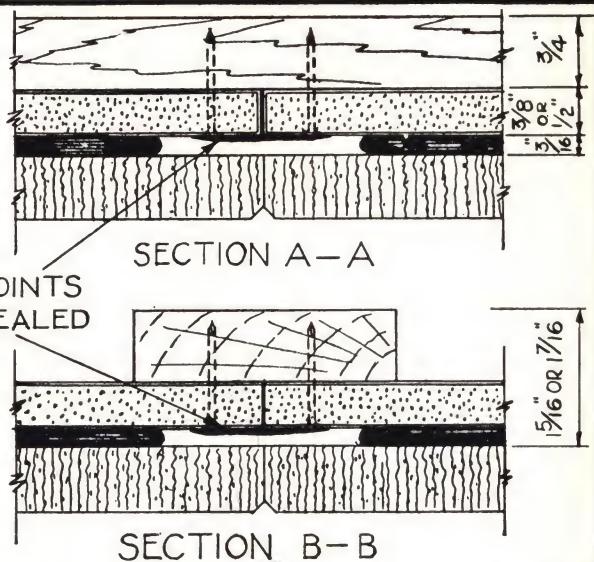
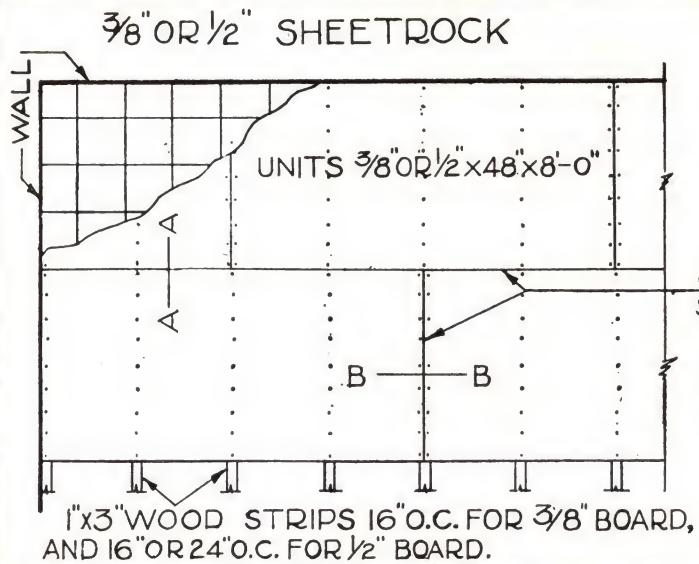
Delete paragraphs (a) and (b) under paragraph 2, Materials.

1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The acoustical tile shall be installed by the *USG Zee-Spline Method or Clip-Spline Method* of mechanical erection. The acoustical contractor shall furnish and install necessary metal grillage and the metal finish channels (or wood mouldings) at wall intersections according to manufacturer's instructions. $1\frac{1}{2}$ " channels 4 feet on centers and supporting hangers 4 feet on centers (shall) (shall not) be installed by the acoustical applicator.

ACOUSTONE "F"

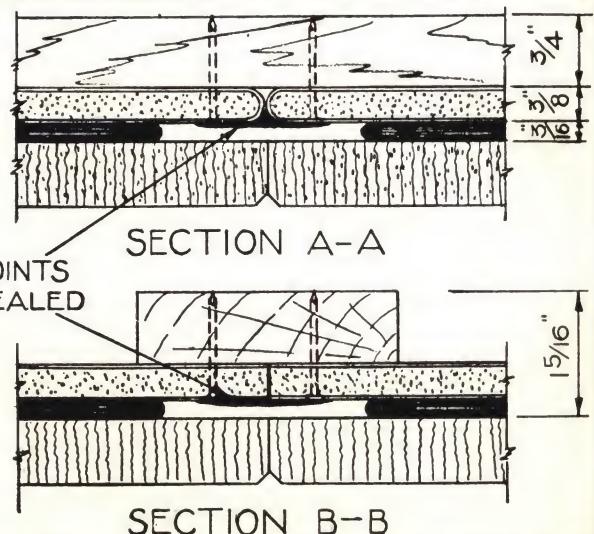
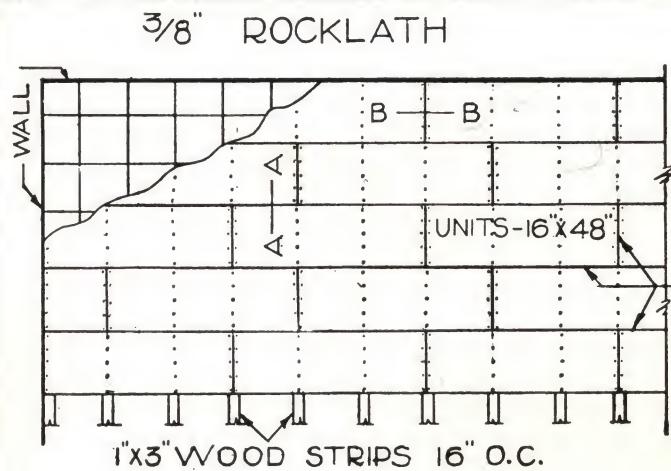
ACOUSTONE CEMENTED TO GYPSUM BOARDS ON WOOD STRIPS

SHEETROCK* WALLBOARD



NAILS - 1 1/8" 13 GAUGE BLUED $\frac{3}{8}$ " FLAT HEAD SMOOTH DIAMOND POINT
NAIL SPACING - CEILINGS 7" WALLS - 8"

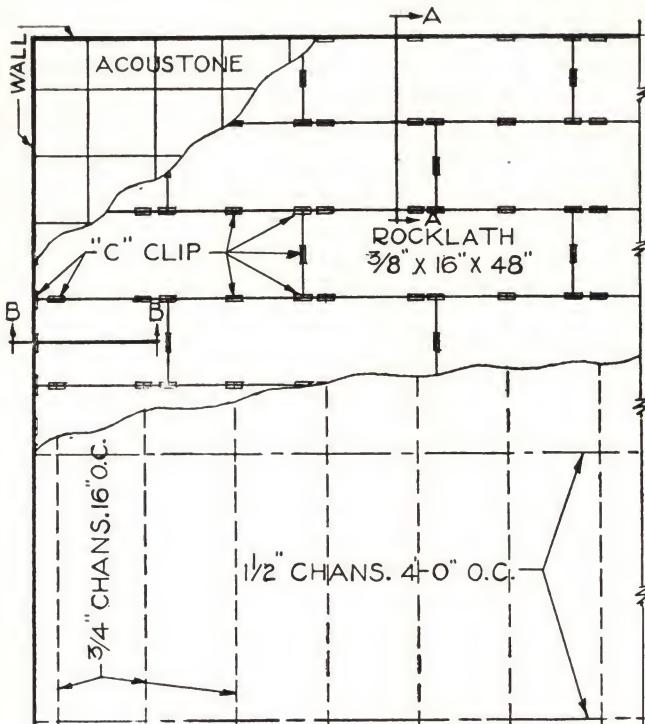
ROCKLATH* PLASTER BASE



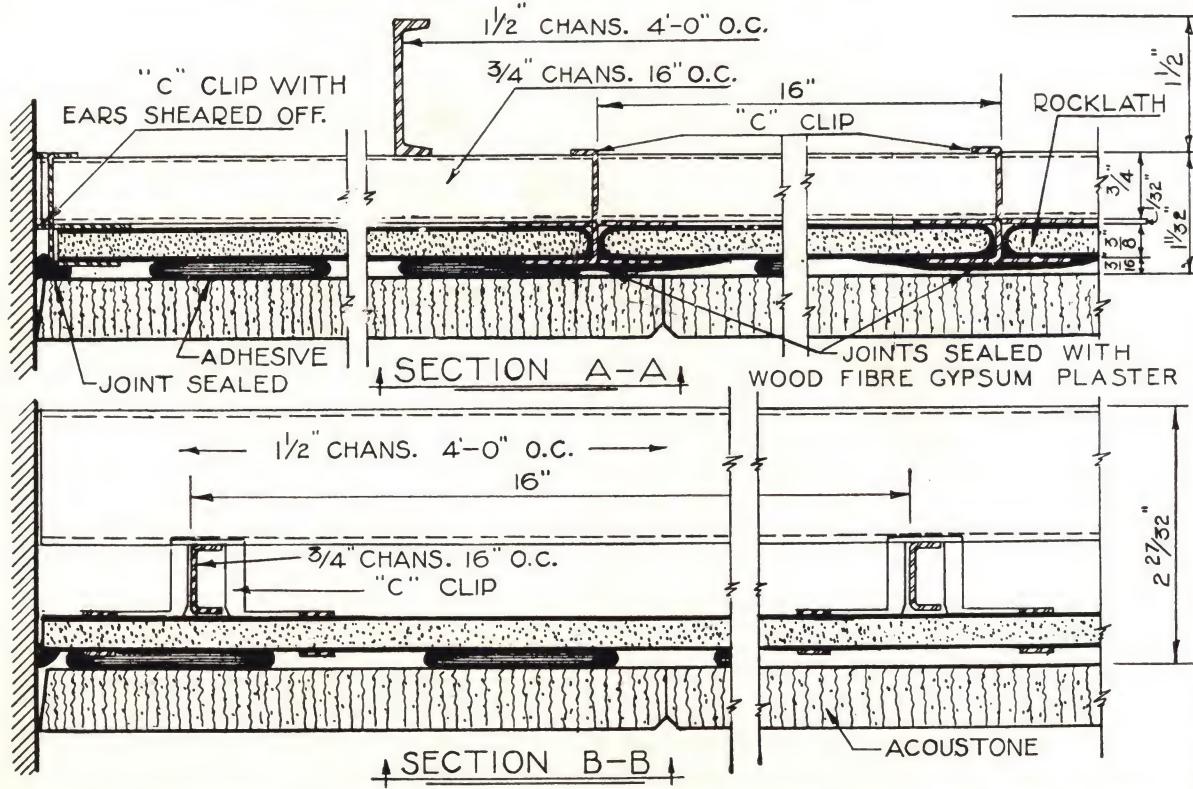
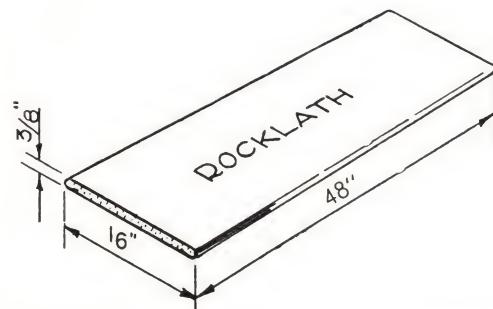
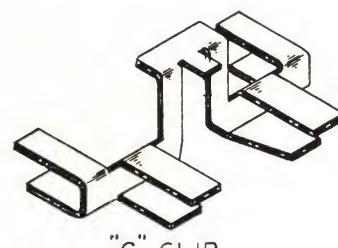
NAILS - 1 1/8" 13 GAUGE BLUED $\frac{3}{8}$ " FLAT HEAD SMOOTH DIAMOND POINT.
NAIL SPACING - APROX. 4" APART.

ACOUSTONE "F"

ACOUSTONE CEMENTED TO GYPSUM BOARD—METAL SUSPENSION

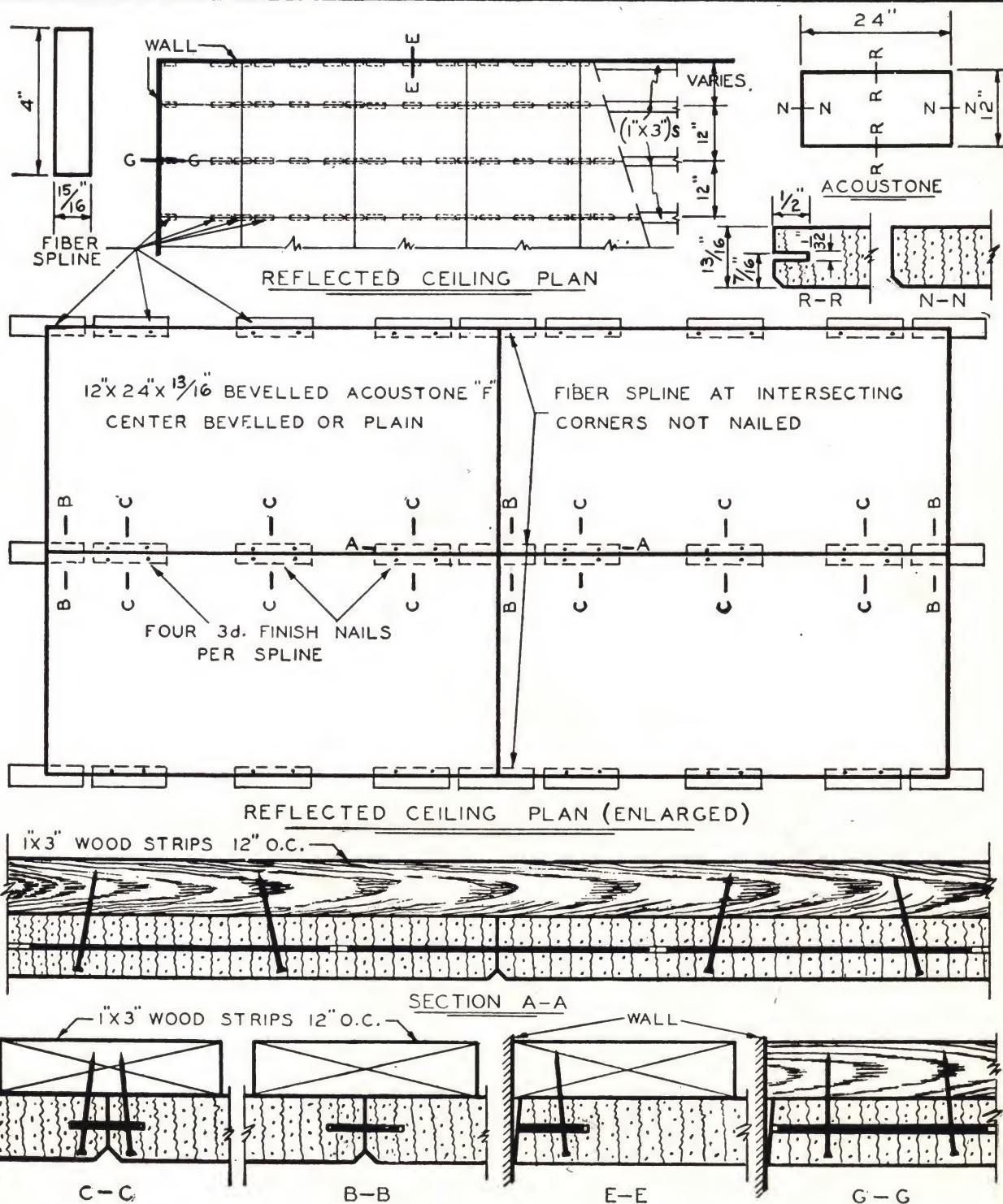


CAUTION:
REFER TO PARAGRAPH 8, PAGE 6



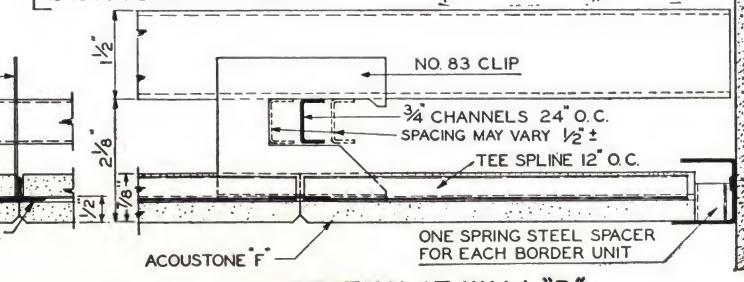
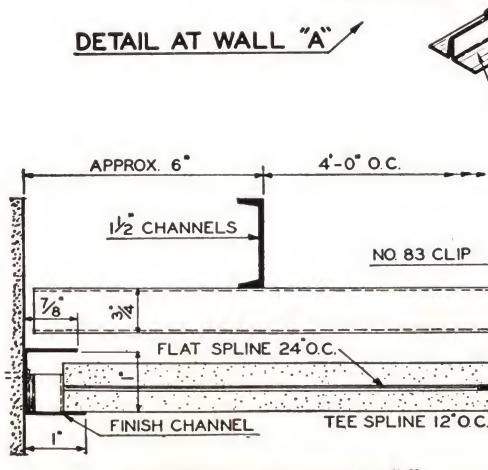
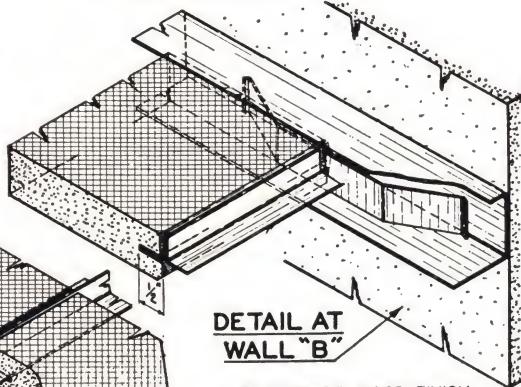
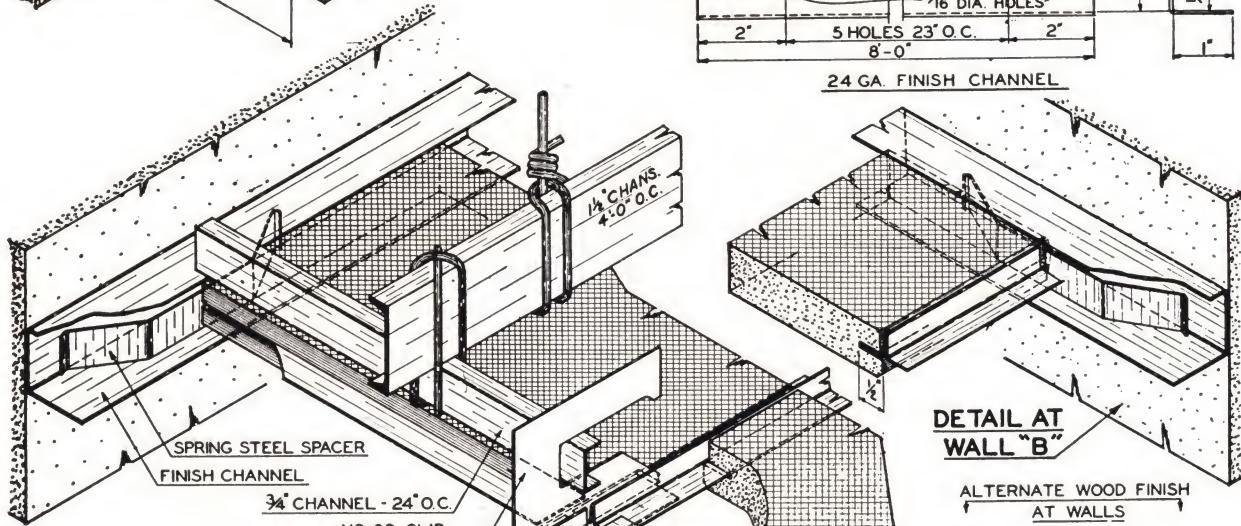
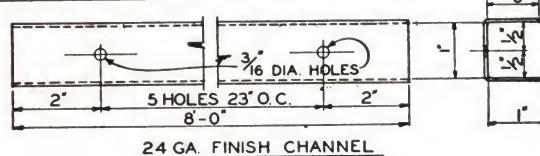
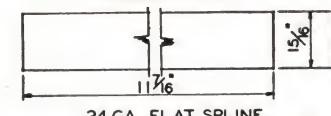
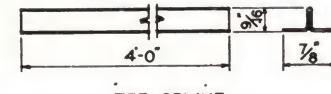
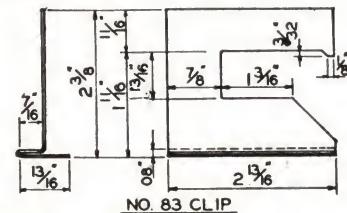
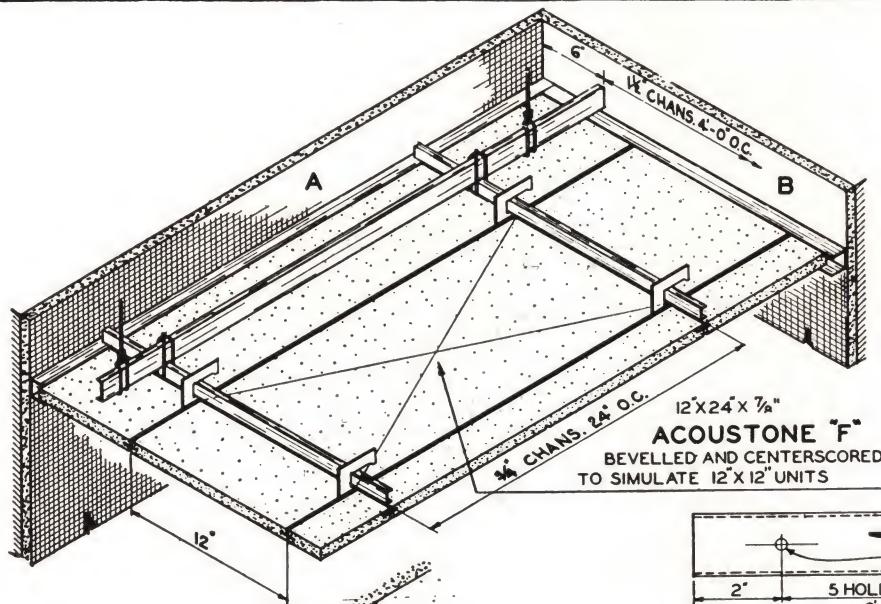
ACOUSTONE "F"

METHOD OF ATTACHING ACOUSTONE TO WOOD STRIPS BY NAILING THROUGH FIBER SPLINES



ACOUSTONE "F"

MECHANICALLY SUSPENDED ACOUSTONE "CLIP- SPLINE METHOD"

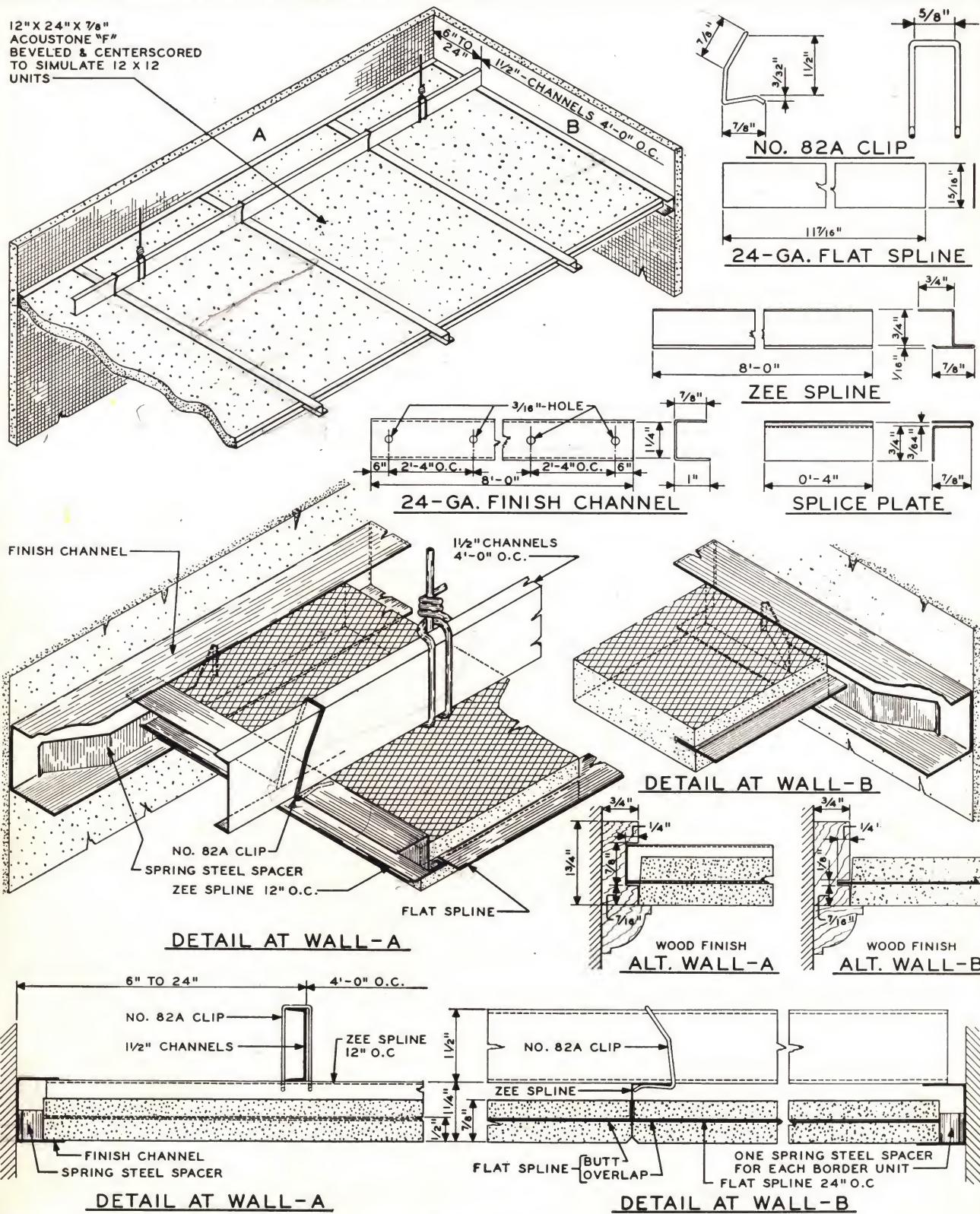


SECTION AT WALL "A"

SECTION AT WALL "B"

ACOUSTONE "F"

MECHANICALLY SUSPENDED ACOUSTONE "ZEE-SPLINE METHOD"



MOTIF'D® ACOUSTONE®

DESCRIPTION

MOTIF'D ACOUSTONE mineral acoustical tile is standard ACOUSTONE "F" mineral acoustical tile with a permanent integral decoration "etched" into its surface by an exclusive USG process. After the "etching" is completed, the tile is mill painted. The pattern is produced by the heavier shadow caused by the "etched" portion of the tile rather than by differences in applied color. Soft, low contrast can be maintained or the pattern can be accentuated by properly positioning the lighting source to increase the shadow effect.

SIZE

MOTIF'D ACOUSTONE is available in 12" x 12" units; $1\frac{1}{16}$ " or $1\frac{3}{16}$ " thick; with square edges only, kerfed for splines.

FUNCTION AND UTILITY

MOTIF'D ACOUSTONE embodies all the function and utility of ACOUSTONE "F" except for the following:

Light Reflection—The light reflection of white MOTIF'D ACOUSTONE is 78%.

Designs—Many standard tile patterns are available; or we will execute exclusive patterns of any design limited to "etching" single tile in not more than 2 directions and with a result-

ing pattern which can be produced within the area of four 12" x 12" units.

Cost—Costs slightly more than ACOUSTONE "F."

Installation—Application with adhesive and splines is the only method recommended using the same methods as for adhesive application of ACOUSTONE "F."

ARCHITECTURAL SPECIFICATIONS FOR MOTIF'D ACOUSTONE

(Phrases in parentheses are explanatory)

1. **SCOPE.** (List and locate all areas to receive acoustical material).

2. **MATERIALS.** Acoustical material shall be MOTIF'D ACOUSTONE manufactured by the United States Gypsum Company in (state color).

Units shall be (state thickness) and have a (Noise Reduction Coefficient of . . .) or (512 frequency coefficient of . . .) (select from page 5).

Adhesive shall be (refer to specification under ACOUSTONE "F").

3. **INSTALLATION.** The installation shall be made by an applicator approved by the acoustical material manufacturer. The design shall be (state standard pattern number or detail design). The units shall be securely cemented in place. (Continue according to adhesive application methods for ACOUSTONE "F".)

HOW IT WORKS

The unretouched photographs below were made from the same point of the same section of an installation of MOTIF'D ACOUSTONE under three different lighting conditions. (1) The left-hand picture shows about maximum contrast or color difference obtained under normal lighting; (2) The central illustration, the minimum contrast; (3) the reversal of pattern in the right-hand picture, when light was shifted 180° from that used in

the left-hand view. Such changes in degrees of contrast are usually apparent in every MOTIF'D ACOUSTONE installation. This "mobile" effect shifts, not only with light changes, but with changes in position of the observer. The pattern never becomes monotonous. The barely measurable reduction in light reflective ability does not cause any significant changes in lighting costs.



Lighted from upper right corner



Lighted with single lights on either side of camera position



Lighted from lower left corner

DESIGNS

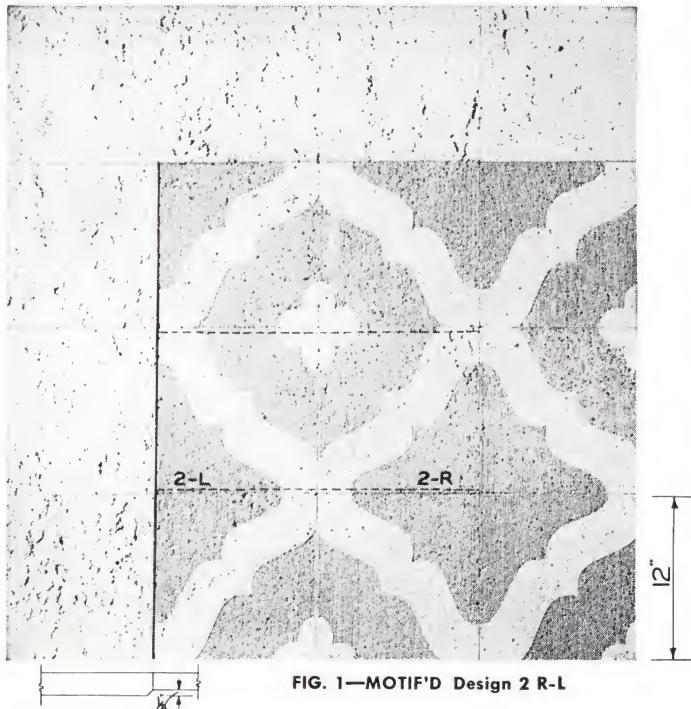


FIG. 1—MOTIF'D Design 2 R-L

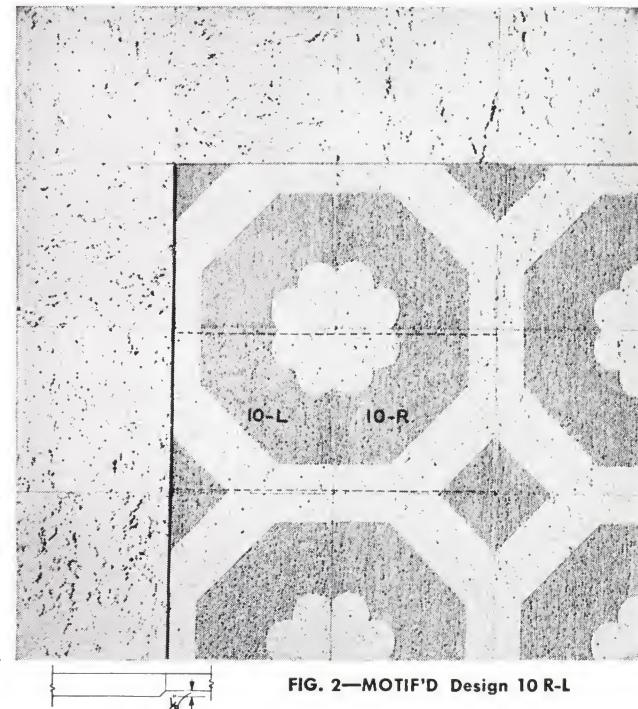


FIG. 2—MOTIF'D Design 10 R-L

*Trademarks Reg. U. S. Pat. Off.

MOTIF'D ACOUSTONE

DESIGNS—(Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines-----indicate direction of kerfing for fibre splines



FIG. 3—MOTIF'D DESIGN 32-A with corner unit mitered on job.

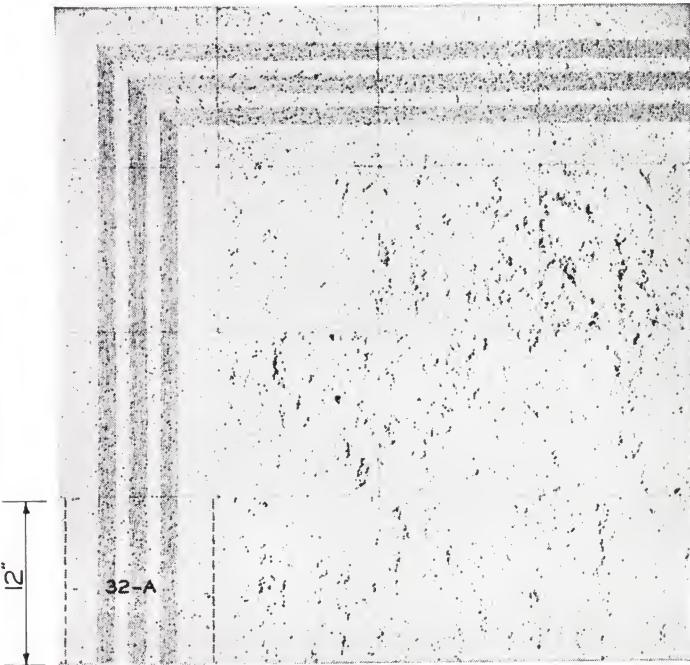


FIG. 4—MOTIF'D DESIGN 32-A with corner unit mitered on job.

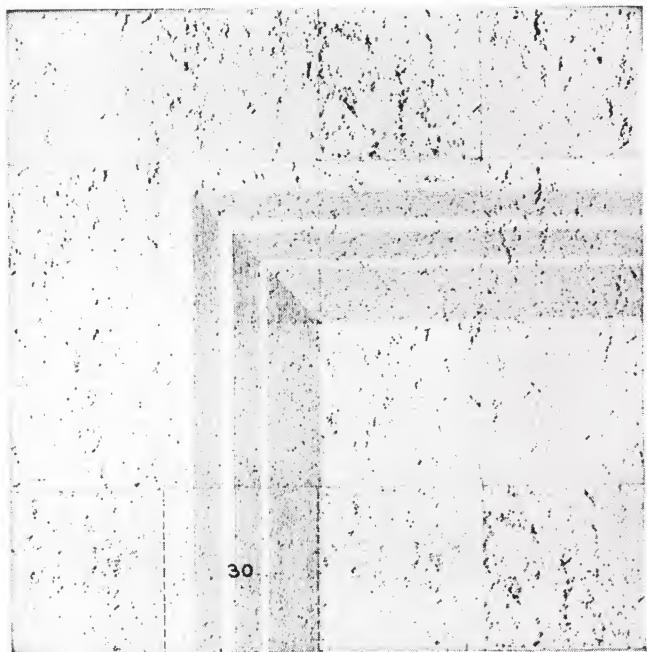


FIG. 5—MOTIF'D DESIGN 30 with corner unit mitered on job.

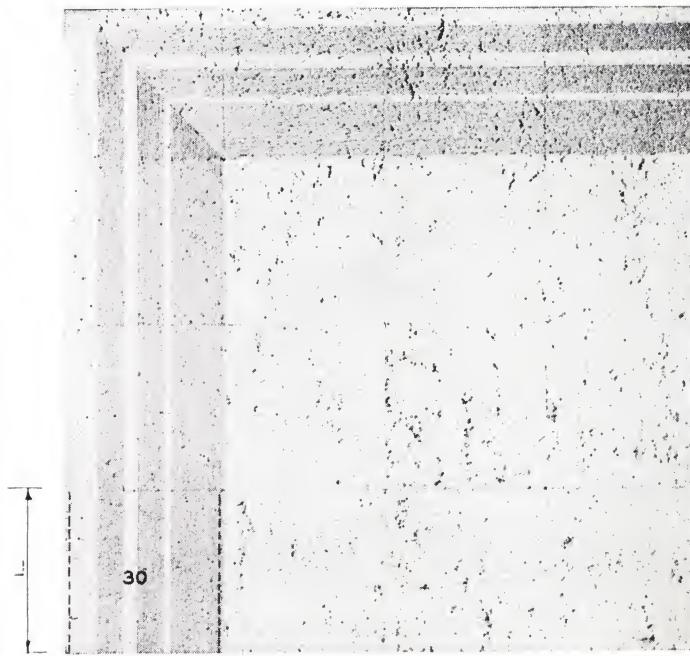


FIG. 6—MOTIF'D DESIGN 30 with corner unit mitered on job.

MOTIF'D ACOUSTONE

DESIGNS—(Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{3}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines ----- indicate direction of kerfing for fibre splines

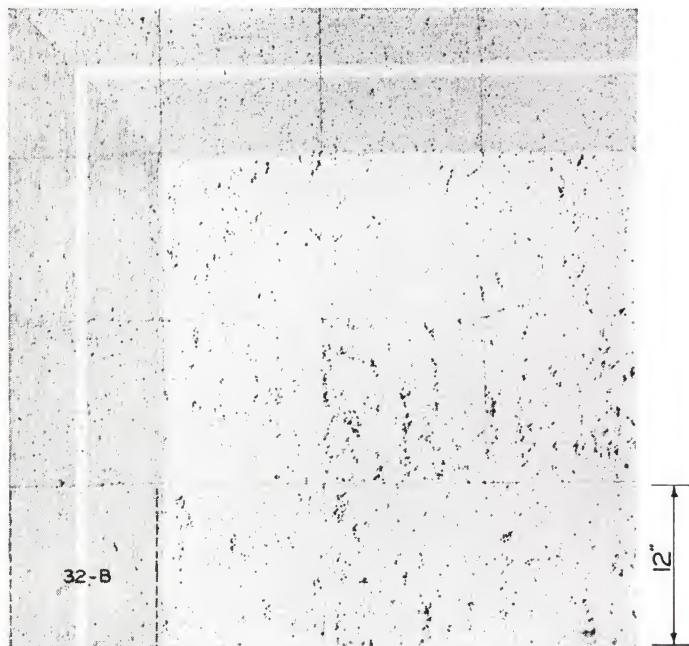


FIG. 7—MOTIF'D DESIGN 32-B with corner unit mitered on job.

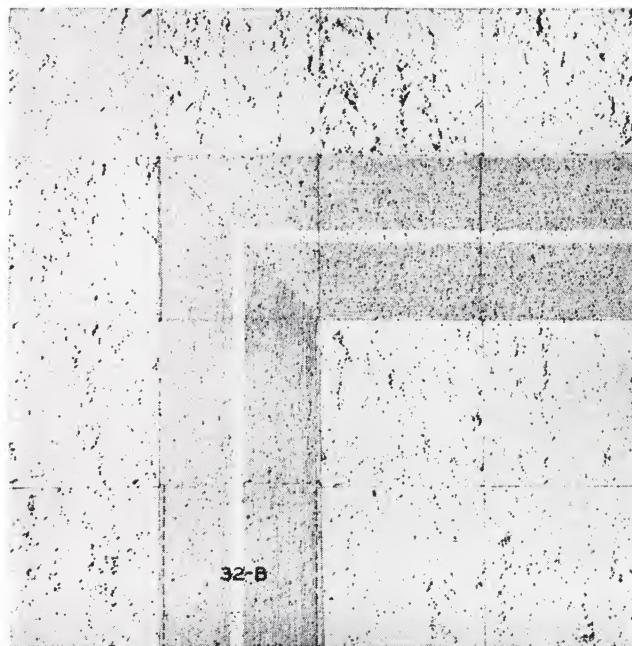


FIG. 8—MOTIF'D DESIGN 32-B with corner unit mitered on job.

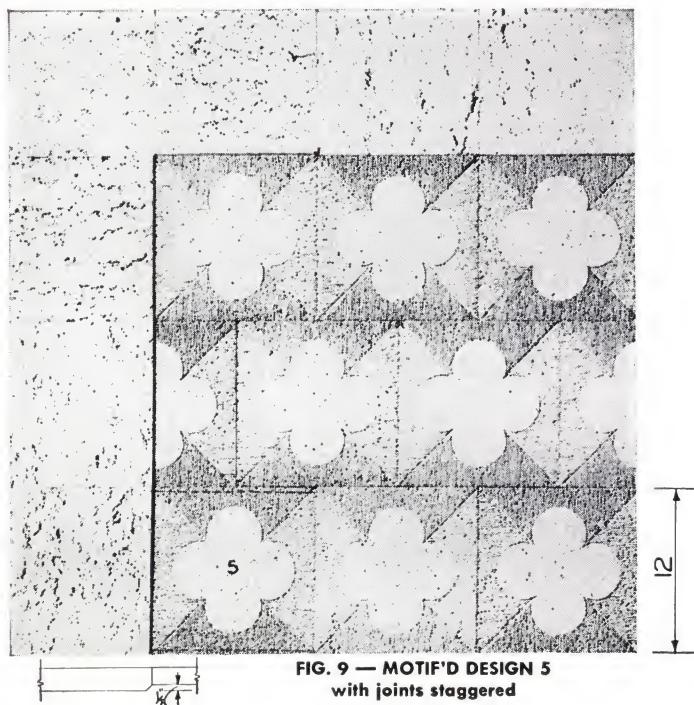


FIG. 9 — MOTIF'D DESIGN 5
with joints staggered

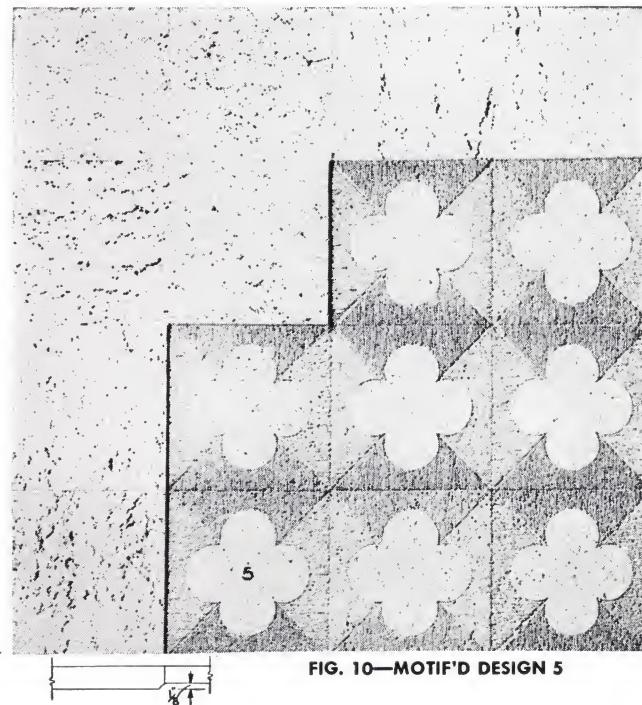


FIG. 10—MOTIF'D DESIGN 5

MOTIF'D ACOUSTONE

DESIGNS — (Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines ----- indicate direction of kerfing for fibre splines

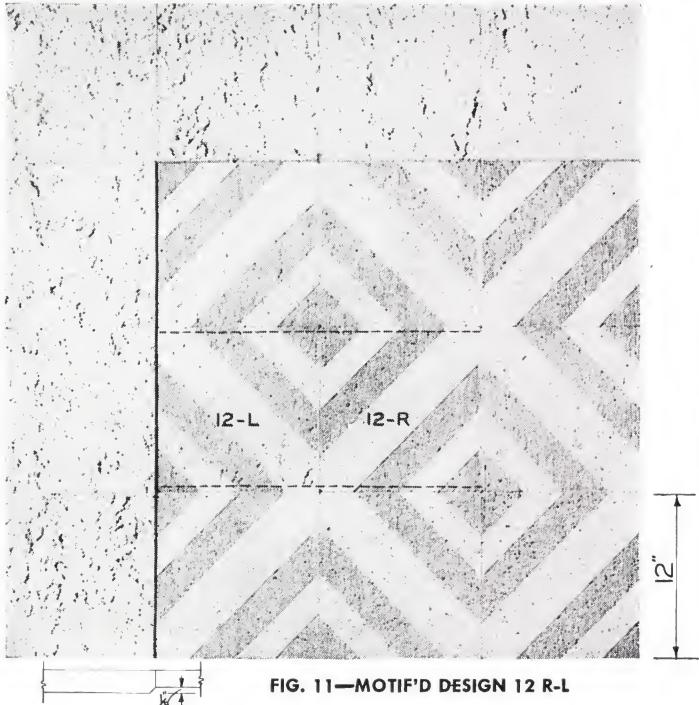


FIG. 11—MOTIF'D DESIGN 12 R-L

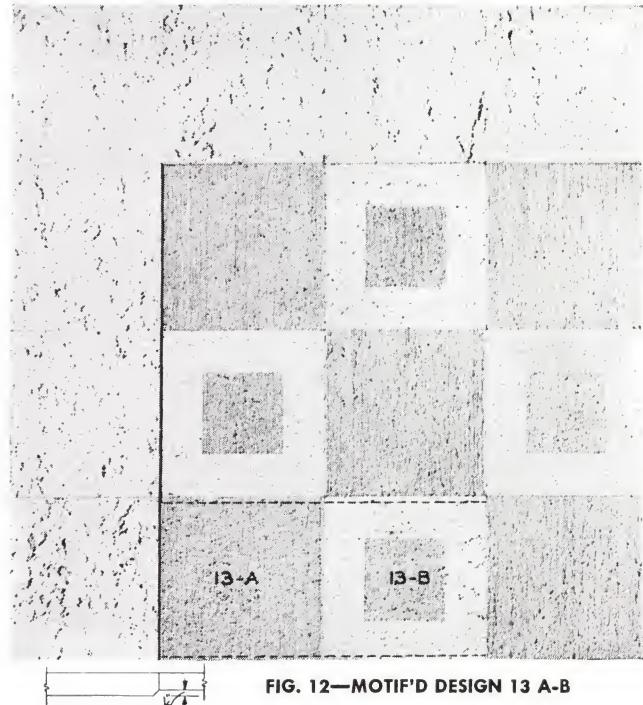


FIG. 12—MOTIF'D DESIGN 13 A-B

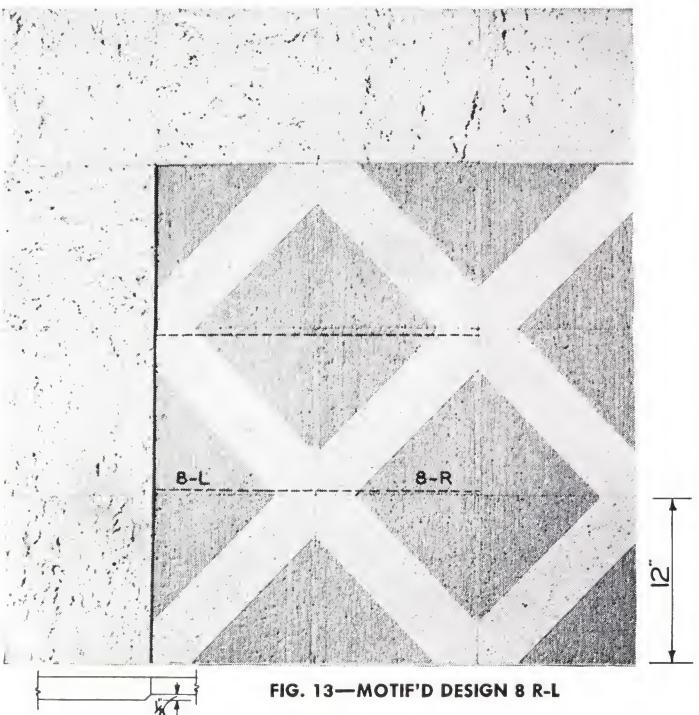


FIG. 13—MOTIF'D DESIGN 8 R-L

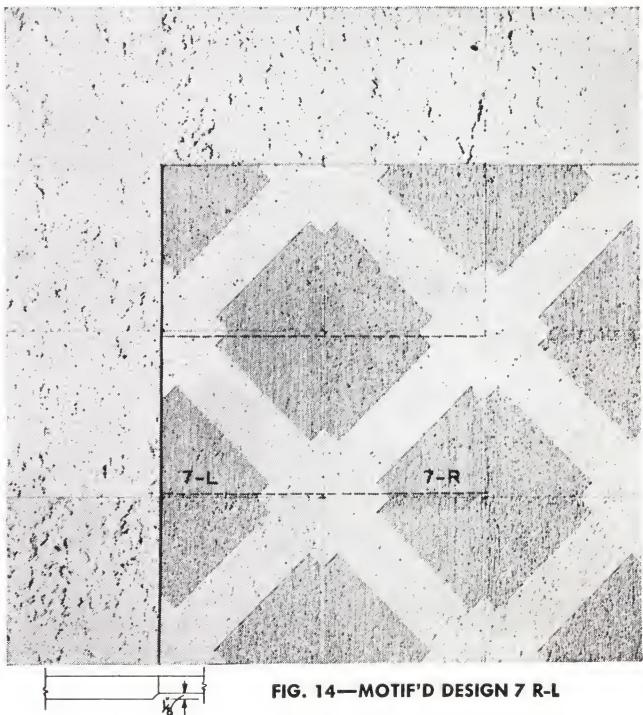


FIG. 14—MOTIF'D DESIGN 7 R-L

MOTIF'D ACOUSTONE DESIGNS—(Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{1}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines ----- indicate direction of kerfing for fibre splines

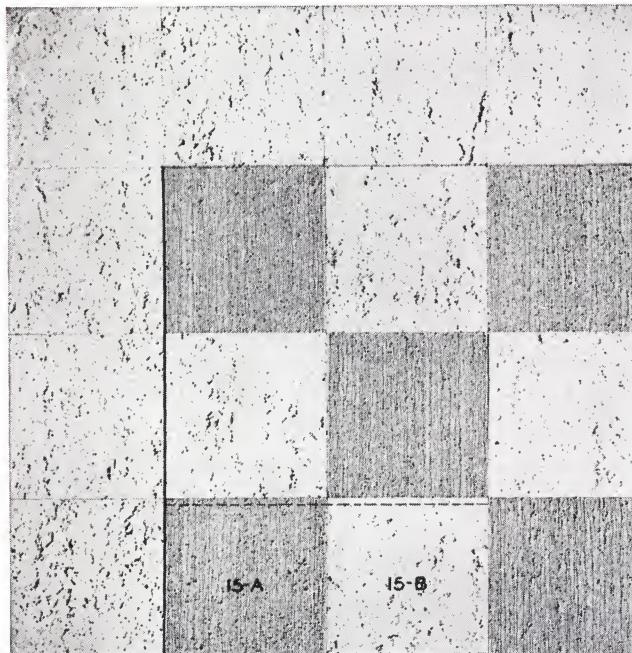


FIG. 15—MOTIF'D DESIGN 15 A-B

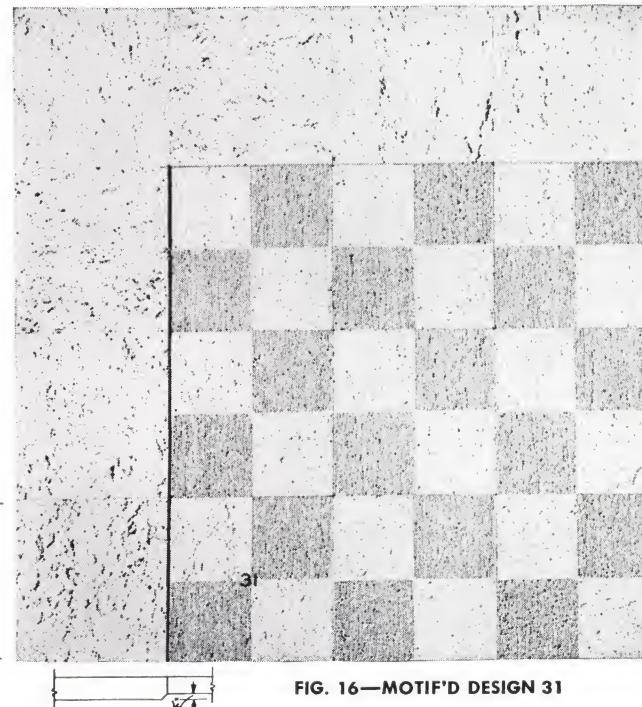


FIG. 16—MOTIF'D DESIGN 31

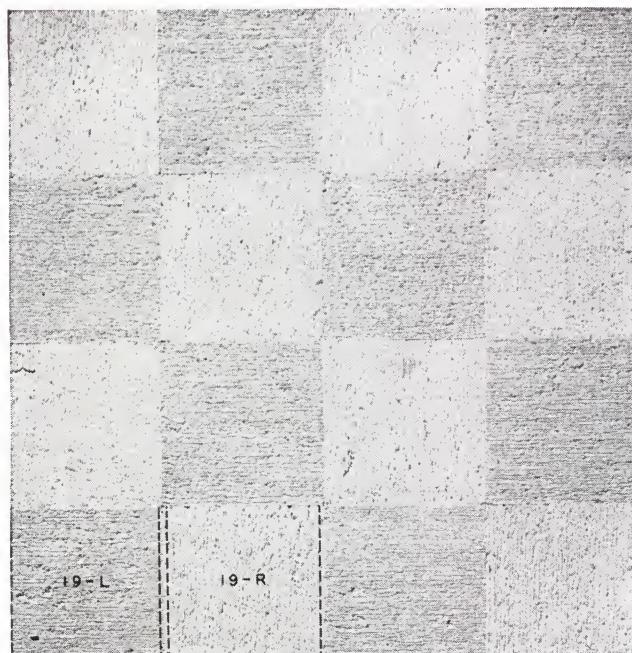


FIG. 17—MOTIF'D DESIGN 19 R-L

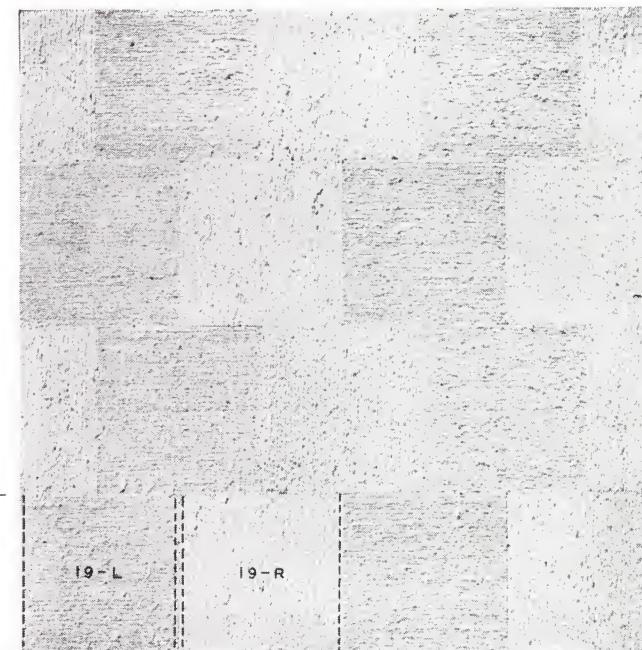


FIG. 18—MOTIF'D DESIGN 19 R-L

MOTIF'D ACOUSTONE

DESIGNS — (Continued)

MOTIF'D ACOUSTONE ceiling designs are shown used alone or in combination with standard ACOUSTONE "F." The plain ACOUSTONE "F" border tile (at the designer's option) can be $\frac{1}{8}$ " thicker than the field tile with a $\frac{3}{8}$ " bevel on the field side only. The border can be more or less than 12"

wide by extending 12" border units and job cutting to balance the field design. All units furnished in 12" x 12" size, kerfed for spline alignment. Treatment on walls below wainscot height is not recommended.

Dotted Lines----- indicate direction of kerfing for fibre splines

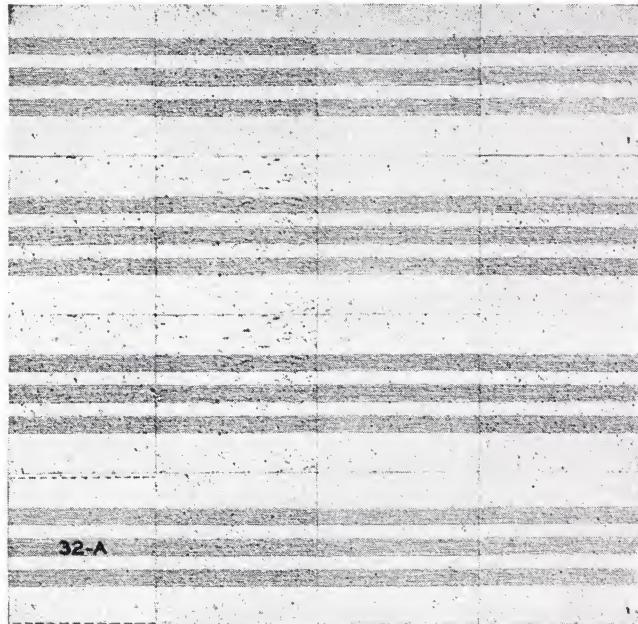


FIG. 19—MOTIF'D DESIGN 32A

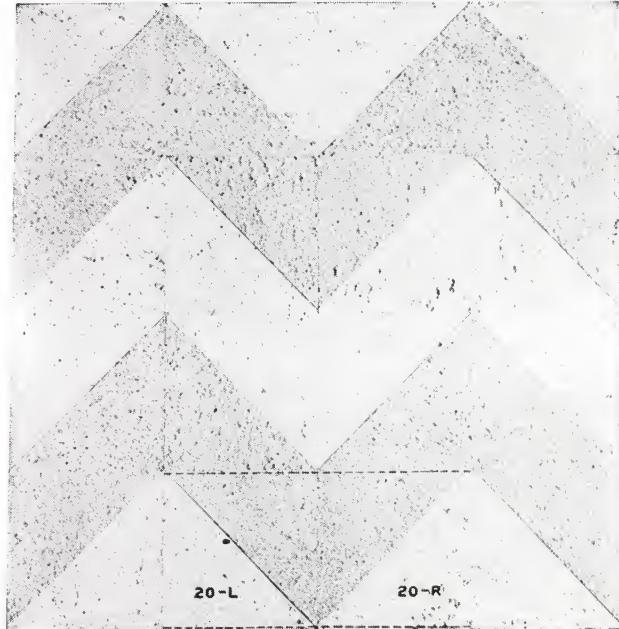


FIG. 20—MOTIF'D DESIGN 20 R-L

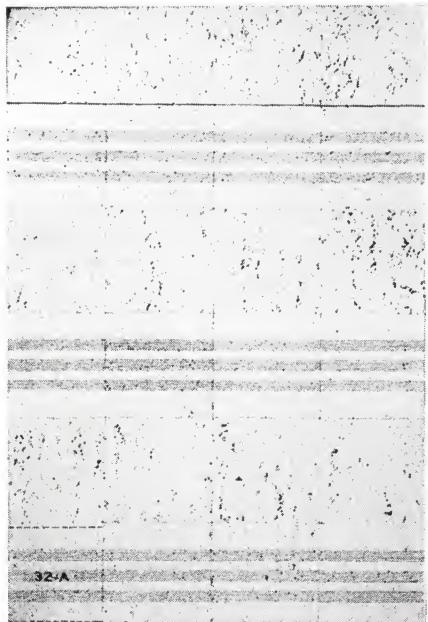


FIG. 21—MOTIF'D DESIGN 32-A

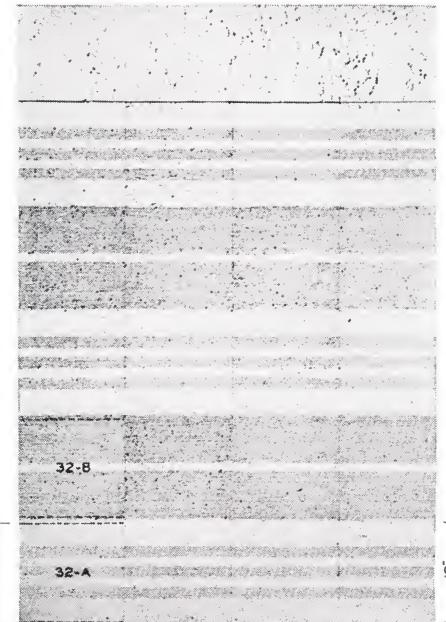


FIG. 22—MOTIF'D DESIGN 32 A-B



FIG. 23—MOTIF'D DESIGN 30

AUDITONE* ACOUSTICAL TILE

DESCRIPTION

AUDITONE wood fiber acoustical tile is a slotted wood fiber tile designed to give maximum acoustical efficiency and strength and an unobtrusive, efficient, functional appearance. Each unit is finish-painted at the factory and is available accurately formed, with beveled or tongue and groove edges.

SIZES — $\frac{3}{4}$ " or 1" by 12" x 12" or 12" x 24". (See Technical Data Below.) The 12" x 24" tongue and groove units are scored and slotted to represent two 12" x 12" units with the slots parallel to the long edges.

FUNCTION AND UTILITY

Sound Absorption—AUDITONE is made in two thicknesses with a Noise Reduction Coefficient of .65 and .70 and absorptions at 512 cycles per second of .72 and .78 respectively. (See Technical Data Below.)

Edge Treatment—AUDITONE is made with butt bevel edges for cementing to proper bases without supplementary nailing; supplied with tongue and groove edges for blind nailing directly to joists, studs or nailing strips. The tongue and groove maintains level joints and a smooth appearance. Tongue and groove AUDITONE is not recommended for application with adhesive. (See Technical Data Below.)

Paint and Color—Finish-painted at the factory on face and bevels in high light reflecting white.

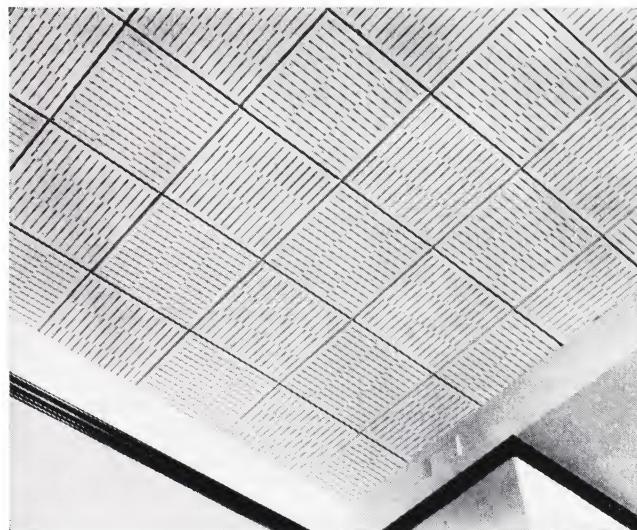
Weight—AUDITONE weighs approximately .91 lb. per square foot in the $\frac{3}{4}$ " thickness and approximately 1.23 lbs. per square foot for the 1" thickness. (See Technical Data Below.)

Paintability and Maintenance

AUDITONE can be repeatedly brush or spray painted following normal paint procedures with oil, resin emulsion, casein, calcimine or any of the commercial types of paint without loss of sound absorption at 512 cycles per second or in the Noise Reduction Coefficient. AUDITONE can be cleaned with putty or paste type wallpaper cleaner.

Light Reflection

See Technical Data below.



Fire Resistance

Combustible.

Heat Conductivity

AUDITONE has a low thermal conductivity ("k" factor=.38).

Resistance to Soiling and Breathing

The smooth, painted finish of AUDITONE wood fiber acoustical tile resists soiling; and the tongue and groove edge type prevents objectionable air travel through the joints when used on suspended nailing strips.

Cost

Lower in cost than ACOUSTONE.

Limitations of Use

AUDITONE should not be used below wainscot height or where it will be subjected to severe impact or abrasion.

It is not recommended in dish-washing rooms, or where it will be exposed to steam or constant high humidity.

TECHNICAL DATA

SOUND ABSORPTION COEFFICIENTS

Acoustical Materials Association										Bureau of Standards															
Type	Thickness	Mounting	Coefficients						Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	Coefficients						Noise Red. Coef.	Wt. (lbs.) per Sq. Ft.	SS-A-118a Feb. 12, 1948						
			128	256	512	1024	2048	4096			128	256	512	1024	2048	4096			512 Cycles	N. R.	Type	Class			
B	1"	1	.18	.38	.78	.79	.80	.71	.70	1.19	B	1"	1	.24	.50	.73	.82	.75	.64	.70	1.14	105	5	II	C
B	1"	2	.32	.53	.60	.78	.83	.74	.70	1.19	B	1"	2	.19	.64	.63	.72	.78	.70	.70	1.18	107	5	II	C
C	$\frac{3}{4}$ "	1	.11	.25	.72	.84	.80	.80	.65	.84	C	$\frac{3}{4}$ "	1	.08	.30	.66	.80	.86	.75	.65	.79	106	6	II	C
C	$\frac{3}{4}$ "	2	.15	.48	.58	.81	.82	.78	.65	.84	C	$\frac{3}{4}$ "	2	.16	.64	.52	.60	.72	.77	.60	.97	109	7	II	C

Tile tested were painted with a full finish coat of paint. Mounting No. 1—Cemented to plasterboard—considered equivalent to cementing to plaster or concrete ceilings. Mounting No. 2—Nailed to wood strips.

LIGHT REFLECTION:

AUDITONE B, White 74%
AUDITONE C, White 72%
Tests by Official A.M.A. Laboratory.

HEAT CONDUCTIVITY:

$k = .38$

FIRE RATING

Combustible

DESIGN DATA

UNITS	SLOTTED	SIZE	CENTER CROSS-SCORED
T&G { Field Edge { Field Fillers Borders	Yes Yes No	($\frac{3}{4}$ " or 1") x 12" x 24" ($\frac{3}{4}$ " or 1") x 12" x 12" ($\frac{3}{4}$ " or 1") x 12" x 24"	Yes No Yes
Butt- { Field Bevel { Borders	Yes No	($\frac{3}{4}$ " or 1") x 12" x 12" ($\frac{3}{4}$ " or 1") x 12" x 12"	No No

*Trademark Reg. U. S. Pat. Off.

AUDITONE

INSTALLATION METHODS

AUDITONE is installed by approved USG acoustical contractors by one of two methods:

1. Application with adhesive (Butt Bevel Type only with or without nailing).
2. Blind nailing directly to wood strips, studs, joists, or other wood supports.

ADHESIVE APPLICATION (All thicknesses)

See architectural specifications below for amount and type of adhesive recommended.

Size and Type of Units

Should not exceed 12" x 12"; use butt bevel type only.

Bases for Adhesive Application of Auditone

Refer to "Bases for Adhesive Application of Acoustone" page 6.

Patterns

A variety of ceiling and wall patterns may be obtained by turning the tile to change the direction of slots on adjacent units or groups of units. Diagonal or square patterns with or without plain borders may be used.

APPLICATION BY BLIND NAILING (All thicknesses)

Size and Type of Units

12" x 24" Tongue and Groove units only are used except for 12" x 12" field filler units adjacent to border.

Bases for Nailing

Tongue and Groove AUDITONE 12" x 24" may be nailed to supports spaced not to exceed 16" on center for square pattern and 12" on center for diagonal pattern. Nailing strips need not coincide with joints in acoustical units because of the tongue and groove feature in AUDITONE. Where nailing strips are used, the following table gives size and span:

Size of nailing strips	Maximum space between supports
1" x 2"	24"
1" x 3"	36"
2" x 2"	42"

Where a suspended ceiling is required, a double grillage is recommended using as main members (2" x 2") (2" x 3") or (2" x 4") which should be cross-furred with wood nailing strips spaced as shown in the above table. Steel channels (1½" or 2") may be used in lieu of the main wood members to which wood nailing strips may be wired. Nailing strips (2" x 2") or (2" x 3") will successfully span 48" if a 1" x 2" stiffener strip is nailed to them midway between and parallel to the 48" supports. Vertical struts should be used as required to give a rigid nailing base.

Patterns

Patterns are limited by the requirement that all slots must be parallel, the short joints between units offset. Tile may be laid diagonally or perpendicular with supports.

ARCHITECTURAL SPECIFICATIONS FOR AUDITONE

CEMENTED INSTALLATIONS

(Phrases in parentheses are explanatory.)

1. Scope. (List and locate all areas to receive acoustical treatment.)

2. Materials. Acoustical material shall be AUDITONE (¾" "C" or 1" "B") manufactured by the United States Gypsum Company; and shall be finish-painted on the exposed surface and bevels; with a light reflection coefficient not less than 70% as tested by A.M.A. Laboratories; capable of being brush-painted repeatedly with oil paints without loss of sound absorption at 512 frequency or Noise Reduction Coefficient. The (Noise Reduction Coefficient) (sound absorption coefficient at

512 cps) as tested by A.M.A. shall be not less than (choose value from sound absorption table on page 19).

Units shall be 12" x 12" butt bevelled.

The adhesive shall be (Refer to ACOUSTONE Specification Page 7).

3. Installation. (Refer to page 7 except eliminate any reference to splines and spline alignment.)

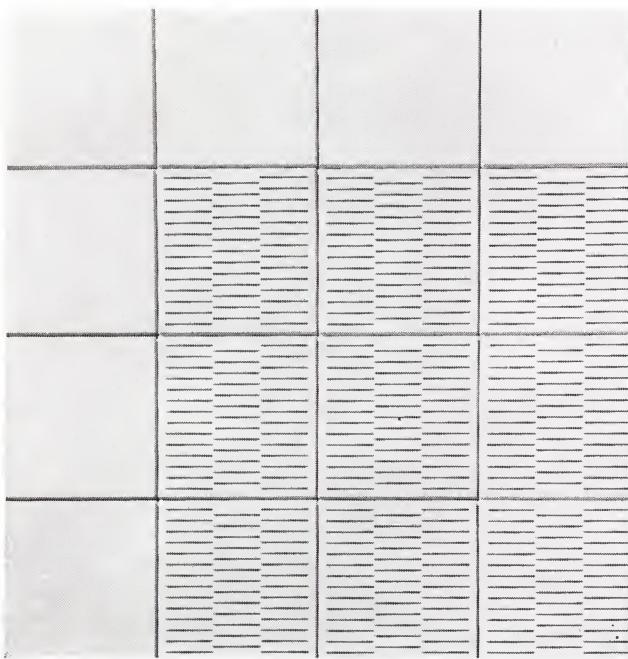
NAILED INSTALLATIONS

Note: Use paragraphs 1, and 2, from above specifications except materials shall be T&G AUDITONE 12" x 24".

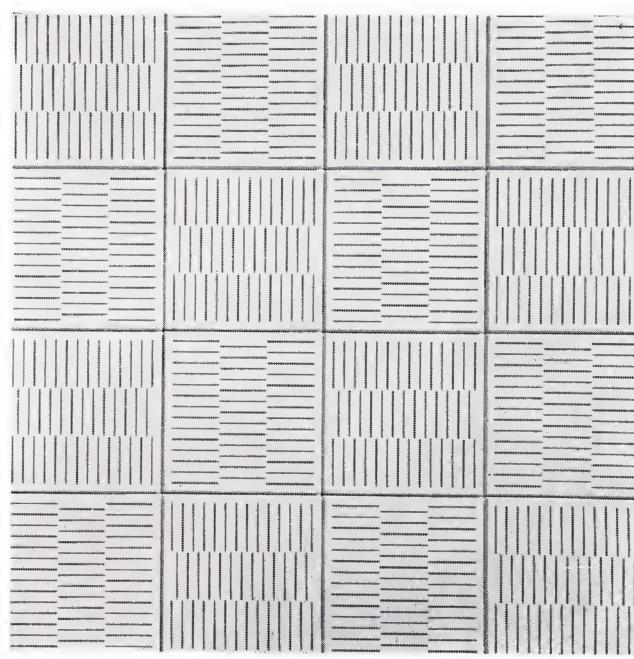
(see bottom of next page)

AUDITONE

INSTALLATION DETAILS

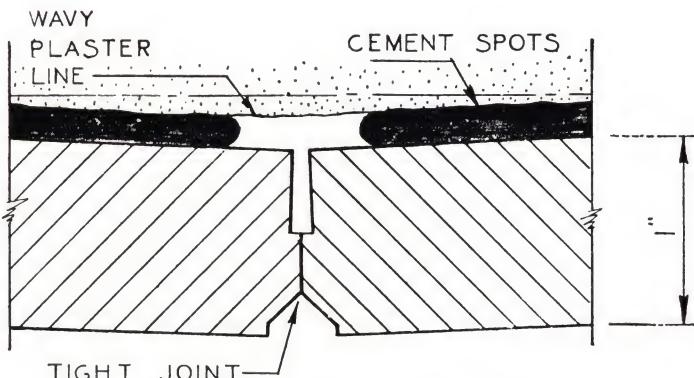


AUDITONE "B"
Field 12" x 12" Laid Parallel—Border 12" x 12" Plain Tile

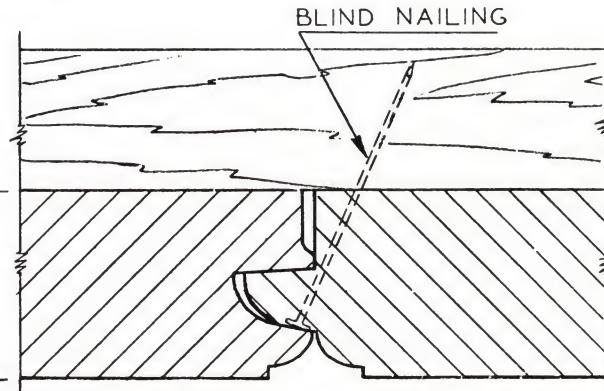


AUDITONE "C"
Field 12" x 12" Checkerboard Pattern—No Border

Application Methods



BUTT BEVEL TYPE
FOR
ADHESIVE APPLICATION



BLIND NAILING
"T" & "G" TYPE
FOR
NAILING APPLICATION

ARCHITECTURAL SPECIFICATIONS FOR AUDITONE—CONT.

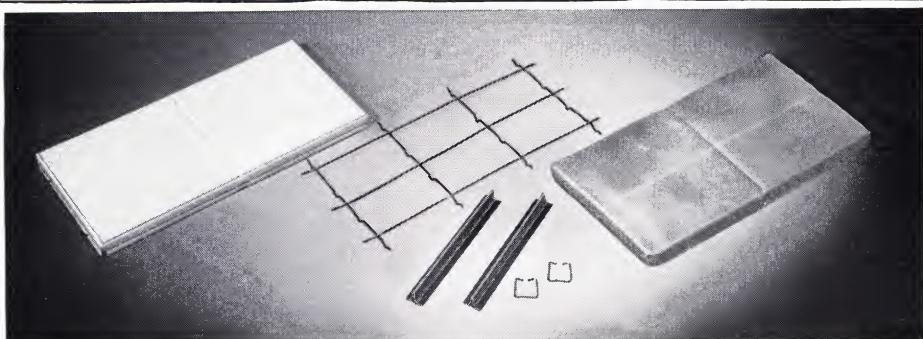
1. Installation. The installation shall be made by an applicator approved by the acoustical material manufacturer. The units shall be installed by blind nailing through the tongue to (wood joists, studs, furring strips, or suitable nailing surface), spaced not to exceed 16" on centers as specified and furnished in place under "Carpentry" section. (Wood grounds shall be installed where necessary to furnish a satisfactory nailing base for border acoustical

units at their intersection with walls or other abutting surfaces.)

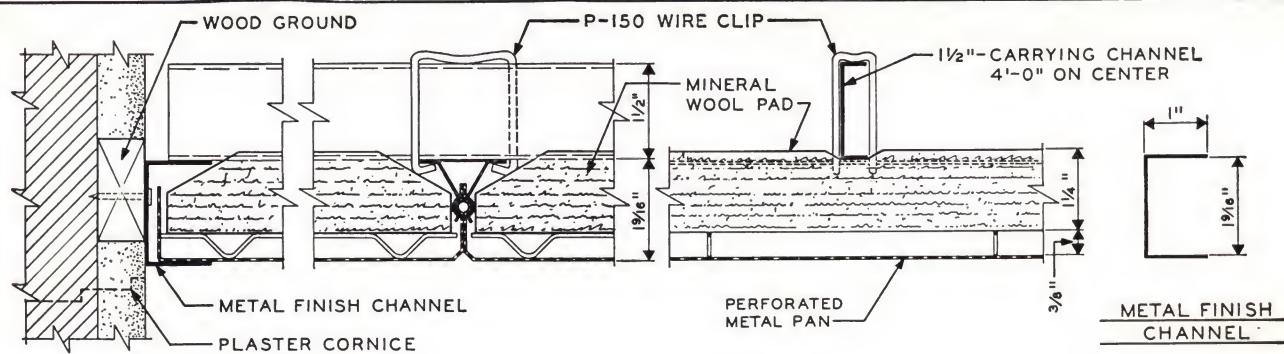
(Reference should be made under "Carpentry" as follows: "Joists or studs or furring strips shall present a suitable level surface to receive acoustical treatment without shimming or additional furring by the acoustical contractor.") Necessary framing and anchorage for support of furring strips (shall, shall not) be a part of this work.

PERFATONE* ACOUSTICAL UNITS

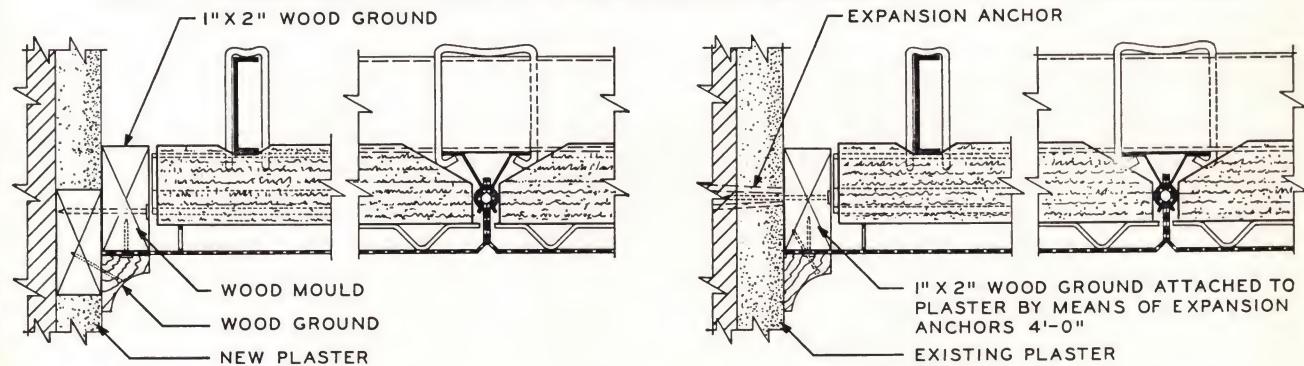
PERFATONE DETAILS



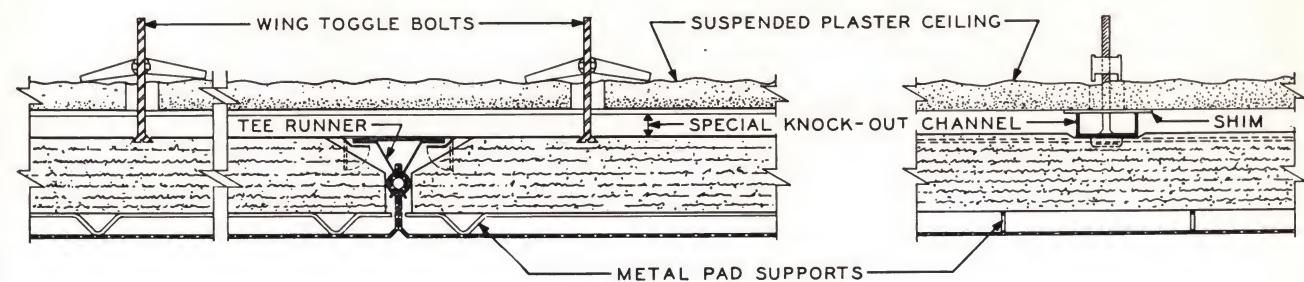
12" x 24" UNITS, CENTER-SCORED TO SIMULATE 12" x 12" UNITS; WIRE GRID SPACER TO SUPPORT MINERAL WOOL PAD; TEE RUNNERS; P-150 CLIPS.



DETAIL SHOWING METAL FINISHING CHANNEL AT WALL



DETAIL SHOWING ATTACHMENT TO NEW AND EXISTING PLASTERED WALLS



SECTIONS SHOWING DIRECT APPLICATION OF PERFATONE CONSTRUCTION USING SPECIAL KNOCK-OUT CHANNELS TO HOLD TEE RUNNERS

PERFATONE* ACOUSTICAL UNITS

DESCRIPTION—PERFATONE acoustical construction consists of perforated 26 ga. zinc-coated, enameled steel units 12"x24" centerscored to simulate 12"x12" units. Mineral wool sound absorbent pads enclosed within the metal units are supported on galvanized wire mesh supports which provide an air space between the metal facing and the pads.

PERFATONE units are also available unperforated to be used as border tile or for various decorative effects.

FUNCTION AND UTILITY—PERFATONE has high sound absorption and is incombustible, washable and paintable.

HIGH SOUND ABSORPTION—PERFATONE has a Noise Reduction Coefficient of .85 and an absorption curve which is relatively flat.

INCOMBUSTIBLE—The metal units and the mineral wool are incombustible. The pads are wrapped in flame-proofed membrane.

HIGH LIGHT REFLECTION—PERFATONE has a white baked enamel finish with a light reflection of 76%.

WASHABLE—The enameled metal surface of PERFATONE may be washed repeatedly without affecting its absorption efficiency. PERFATONE is recommended in areas where grease or dirt in abnormal amounts may necessitate frequent cleaning.

READILY PAINTED—If, at any time, redecoration is desired, PERFATONE may be repainted with any of the standard paints used for interior finishing without affecting its absorbing efficiency.

LIMITATIONS OF USE—In areas of high humidity or where moisture might be troublesome, aluminum pans with galvanized fittings or a different architectural design should be considered.

OTHER USG SOUND CONTROL MATERIALS

PERFORATED ASBESTOS BOARD—An incombustible acoustical construction consisting of perforated $\frac{3}{16}$ " asbestos board covering rock wool pads or blankets. The perforated facing is attached with wood screws or by other means to furring strips. This construction is commonly used in spaces subject to high humidity, impact or abrasion, and in special applications. It is in a higher

ARCHITECTURAL SPECIFICATIONS FOR PERFATONE

(Phrases in parentheses are explanatory)

1. Scope. (List and locate all areas to receive acoustical treatment.)

2. Materials. Acoustical material shall be USG PERFATONE, perforated 26 ga. zinc coated steel units, 12" x 24", formed to simulate 12"x12" units, the edges of which are beveled and returned vertically to be held firmly in place on the 12" sides by special tee runners. The perforated metal units shall contain mineral wool absorbent pads held slightly away from the perforated metal surface by galvanized wire mesh pad supports. The absorbent pad shall be completely enclosed and sealed on four edges, face, and back with a flame-proofed membrane.

The perforated metal tile shall have a prime coat of baked enamel on the back side; and on the face side, a prime coat and a finish coat of baked enamel.

3. Installation. The installation shall be made by an applicator approved by USG.

A. Suspended ceiling construction. To a standard 1½" channel grillage furnished by others the acoustical contractor shall fasten the special tee runners spacing them 24" on centers to hold the perforated metal units. Perforated metal units, pad supports, and absorbent pads shall be carefully assembled and pressed into position in the special tee runner. All edges shall be kept in alignment, and care must be taken to secure a level under-surface. A suitable moulding shall be furnished in place by the acoustical contractor (or by others) at the junction of the PERFATONE ceiling with the walls and columns. Care shall be taken in cutting and fitting the units around all openings.

B. Plastered ceiling construction. The same as in "A" except that the special knockout channel spaced 24" o.c. shall be attached to the present ceiling by means of suitable clips or wires and brought to a level surface.

price range than ACOUSTONE "F" or AUDITONE.

USG SOUND INSULATION—For insulating rooms against extraneous noises. This special USG construction employs patented resilient floor chairs, and wall and ceiling resilient clips to support room surfaces and furnish an effective barrier against sound travel.

*Trademark Reg. U. S. Pat. Off.

ACOUSTICAL SERVICE

Installation of acoustical tile is by United States Gypsum Company approved Acoustical Contractors. Upon request, the United States Gypsum Company, or its authorized acoustical contractors, will make analyses and recommendations, without obligation, on sound control problems. A complete line of acoustical materials is available.

USG ACOUSTICAL CONTRACTORS

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Birmingham.....	Shook and Fletcher Supply Co.....	2915 10th Ave. North
Fort Smith.....	Harry G. Barr Company.....	424 Garrison Ave.
Little Rock.....	Nevil C. Withrow Co.....	Pyramid Bldg.
Los Angeles.....	R. E. Howard Co.....	1701 W. Slauson Ave.
San Francisco.....	F. K. Pinney, Inc.	636 Clay St.
Denver.....	Construction Specialties Co.	2026 Arapahoe St.
Hartford.....	W. T. Roberts Construction Co.	60 Putnam St.
Washington.....	Anning-Johnson Co.	1733 Wisconsin Ave., N. W.
Miami.....	Ray-Hof Agencies, Inc.	3004 N. W. North River Drive
Orlando.....	Ray-Hof, Inc.	1338 W. Church St.
Atlanta.....	Lewis & Company.....	33 Hunter St., S. W.
Chicago.....	Anning-Johnson Co., Inc.	1514 W. Van Buren St.
Moline.....	Builders Sales & Service Co.	1516 Fourth Ave.
Peoria.....	Watson Engineering Co.	507 Alliance Life Bldg.
Rockford.....	Acoustical Engineering Co.	614 Shaw St.
Indianapolis.....	Brown-Anning-Johnson, Inc.	1720 Alvord St.
Cedar Rapids.....	Midland Acoustical Contractors.....	Security Bldg.
Davenport (See Moline, Ill.)		
Des Moines.....	Anning-Johnson Co., Inc.	914 W. Grand Ave.
Louisville.....	Pochel-Chowing, Inc.	1404 W. Market St.
Baton Rouge.....	Pioneer Contract & Supply Co.	2510 Government St.
Baltimore.....	Anning-Johnson Co., Inc.	1126 O'Sullivan Bldg.
Cambridge.....	W. T. Roberts Construction Co.	Third & Rogers Sts.
Detroit.....	The Nichols Company.....	510 Michigan Bldg.
Grand Rapids.....	Harold R. Sobic Co.	956 Cherry St.
Minneapolis.....	Hauenstein & Burmeister, Inc.	614 Third Ave. South
Greenwood.....	Stokes Interiors of the Delta, Inc.	200 Carrollton Ave.
Jackson.....	Stokes Interiors, Inc.	126 S. Farish St.
Kansas City.....	The Stokes Co.	2035 Washington St.
St. Louis.....	Hamilton Co., Inc.	4239 Lindell Blvd.
St. Louis.....	Atkinson-Lindberg Co.	3926 Lindell Blvd.
Omaha.....	Porter-Trustin Co.	910 S. Saddle Creek Road
East Orange.....	Woolsulite Corporation.....	21 S. Sixteenth St.
Buffalo.....	Davis-Fetch & Co., Inc.	236 Scajaquada St.
New York.....	Waldvogel Bros., Inc.	17 E. 42nd St.
Rochester.....	S. A. Spencer	135 Spring St.
Syracuse.....	A. P. Madden Co.	Syracuse Kemper Bldg.
Greensboro.....	Bonitz Insulation Co.	411 Prescott St.
Cincinnati.....	R. E. Kramig & Co., Inc.	222 E. Fourteenth St.
Cleveland.....	H. A. Erf Acoustical Co.	3868 Carnegie Ave.
Oklahoma City.....	The Denman Floors Co.	3023 N. Oklahoma St.
Portland.....	Emert and Zednik Co.	3520 N. E. 57th Ave.
Philadelphia.....	W. M. Moyer Co.	1616 Walnut St.
Pittsburgh.....	Standard Floor Co.	185 41st St.
Chattanooga.....	The Currin Co., Inc.	1208 Carter St.
Memphis.....	R. Cluck Floor Co.	676 Jefferson St.
Dallas.....	Macatee, Inc.	4703 Bengal St.
Fort Worth.....	Builders Material Co., Inc.	2307 Montgomery St.
Fort Worth.....	Gunn & Briggs Co.	2111 Montgomery St.
Houston.....	Macatee Inc.	2209 San Jacinto St.
San Antonio.....	General Supply Co.	227 S. Salado St.
Salt Lake City.....	Elias Morris & Sons Co.	250 East South Temple St.
Richmond.....	W. Morton Northen & Co., Inc.	2 North Sixth St.
Seattle.....	Pioneer Sand & Gravel Co.	901 Fairview Ave., North
Spokane.....	Mansur Materials, Inc.	210 E. Riverside
Huntington.....	Frank B. Groves.....	528 W. 11th Ave.
Milwaukee.....	Insulation Service Co.	1109 N. Hwy. 100



UNITED STATES GYPSUM COMPANY

MEMBER OF



TECHNICAL INFORMATION

SABINITE

REG. U. S. PAT. OFF.

ACOUSTICAL PLASTER



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint



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SABINITE* ACOUSTICAL PLASTER

SABINITE TROWEL FINISH "M"

DESCRIPTION

SABINITE Trowel Finish is a highly efficient acoustical plaster, scientifically prepared to produce a continuous trowel finish of exceptional sound absorbent qualities. It is manufactured in four standard colors and white and requires the addition of water only.

FUNCTION AND UTILITY

SABINITE Trowel Finish acoustical plaster is particularly effective for sound conditioning.

Sound Absorption—Noise reduction coefficient of .60. (See table below.)

Fire Resistance—Basically a mineral, it is incombustible.

Beauty—Its fine texture troweled surface provides unusual beauty, eliminating the mechanical effect generally associated with acoustical treatment.

Adaptability—Conforms to any architectural design. Generally applied over new plastered surfaces, but may also be applied over most existing surfaces through use of a special asphalt emulsion bonding coat according to manufacturer's directions.

High Light Reflection—Laboratory tests indicate light reflection of 64 per cent for SABINITE Trowel Finish Oyster White.

Heat Insulation—SABINITE Trowel Finish has a "k" value of 0.50.

Maintenance—SABINITE Trowel Finish may be cleaned using a putty-type wallpaper cleaner or with a vacuum cleaner using hose and brush attachment.

SABINITE Trowel Finish may be redecorated with TEXOLITE* paint (Standard or Imperial). Apply according to USG specification for painting SABINITE acoustical plaster. (See Page 4)

Tests by a nationally recognized laboratory showed

"SABINITE", "TEXOLITE", "RED TOP", "ROCKLATH" and "BONDCRETE" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "SABINITE" identifies the particular acoustical plaster; "TEXOLITE" identifies the particular paint; "RED TOP" identifies the particular gypsum plaster; "ROCKLATH" identifies the particular gypsum lath and "BONDCRETE" the particular plaster for concrete surfaces manufactured only by United States Gypsum.



Sabinite Trowel Finish



Sabinite Float Finish and 38

SABINITE Trowel Finish had no loss in noise reduction coefficient after 2 spray coats of Imperial TEXOLITE paint were applied.

Easily Applied—Any good plaster craftsman can apply SABINITE.

Economical—Gives more sound absorption per dollar invested than most other commonly used acoustical materials. Low in initial cost.

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.
2. Should not be used where exposed to excessive moisture, (See SABINITE 38—Next Page), and should not be used on the exterior where exposed to the elements.
3. To insure best results, SABINITE must be applied in strict accordance with manufacturer's directions.

SOUND ABSORPTION DATA

SABINITE Type	Thickness	128	256	512	1024	2048	4096	NRC	Authority
Trowel Finish	1/2 Inch	.18	.24	.45	.78	.85	.83	.60	B. of Stds.
Float Finish	1/2 Inch	.19	.22	.43	.80	.75	.75	.55	B. of Stds.
38	1/2 Inch	.25	.26	.32	.60	.76		.50	Riverbank Lab.

SABINITE ACOUSTICAL PLASTER

SABINITE FLOAT FINISH "F"

DESCRIPTION

SABINITE Float Finish is a highly efficient acoustical plaster used where a float finish is desired. It is manufactured in four standard colors and white and requires the addition of water only.

FUNCTION AND UTILITY

SABINITE Float Finish acoustical plaster is effective for sound conditioning and has a slightly harder surface than SABINITE Trowel Finish.

Sound Absorption—Noise Reduction Coefficient of .55. (See table on opposite page.)

Fire Resistance—Basically mineral, it is incombustible.

Appearance—Its continuous floated surface provides the appearance of a heavy sand float finish.

Adaptability—Conforms to most architectural designs.

High Light Reflection—Laboratory tests indicate light reflection of 54 per cent for SABINITE Float Finish Oyster White.

Heat Insulation—SABINITE Float Finish has a "k" value of 0.76.

Maintenance—SABINITE Float Finish may be cleaned with a vacuum cleaner using hose and brush attachments. SABINITE Float Finish may be redecorated with TEXOLITE paint (Standard or Imperial). Apply according to USG specification of painting SABINITE acoustical plaster. (See following page)

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage
2. Must be applied over new plastered surfaces.
3. Should not be used where exposed to excessive moisture (use SABINITE 38), and should not be used on the exterior where exposed to the elements.
4. To insure best results, SABINITE Float Finish must be applied in strict accordance with manufacturer's directions.

PLASTERING SPECIFICATIONS

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise shown on drawings, all walls and ceilings shall be finished as herein described.

SABINITE 38

DESCRIPTION

SABINITE 38 is an hydraulic acoustical plaster prepared for use in locations subjected to high moisture conditions. It is manufactured in white only and provides a float finish.

FUNCTION AND UTILITY

SABINITE 38 is effective for sound conditioning in shower rooms, for ceilings in swimming pools, etc.

Sound Absorption—Noise Reduction Coefficient of .50. (See table on opposite page.)

Fire Resistance—Basically a mineral, it is incombustible.

Appearance—Its continuous floated surface provides the appearance of a heavy sand float finish.

Adaptability—Conforms to most architectural designs.

Heat Insulation—SABINITE 38 has a "k" value of 0.80 (estimated).

Maintenance—SABINITE 38 may be cleaned with a vacuum cleaner using hose and brush attachments.

It may be painted with Imperial TEXOLITE paint applied according to USG directions which will vary with conditions encountered. These directions are available upon request.

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.
2. Must be applied only over a portland cement-lime basecoat.
3. To insure best results, SABINITE 38 must be applied in strict accordance with manufacturer's directions.

MATERIALS

Finish Coat—Acoustical plaster shall be SABINITE Acoustical Plaster (Trowel Finish) (Float Finish) (Type 38) (Specify) manufactured by United States Gypsum Company. Color shall be as designated by the architect.

MIXING AND APPLICATION

Mixing and application of SABINITE Acoustical Plaster and the basecoat plaster shall be in strict accordance with the manufacturer's printed directions which are hereby made a part of this specification.

MIXING & APPLICATION OF SABINITE

SABINITE TROWEL FINISH

MIXING

Machine Mixing Recommended. Put 24 quarts clean water in mixer for each bag of SABINITE Trowel Finish. Mix until SABINITE weighs 15 to 17 pounds net per 12-quart pail (usually 3 to 5 minutes mixing required, depending on speed of mixer).

For Hand Mixing. Place SABINITE Trowel Finish in one end of mixing box.

For each bag of SABINITE Trowel Finish add 24 quarts of clean water in the other end of box.

Hoe SABINITE Trowel Finish into water. The mix will appear dry, but continue hoeing. *Do not add more water.*

Mix until SABINITE weighs 15 to 17 pounds net per 12-quart pail (approximately 15 minutes per 2-bag batch).

APPLICATION

SABINITE Trowel Finish shall be applied in 2 coats to a uniform total thickness of $\frac{1}{2}$ inch over a base coat of RED TOP* gypsum plaster. A full scratch and brown coat are required over metal lath, ROCKLATH* plaster base and masonry bases (not monolithic concrete) to provide proper rigidity, strength and a solid base for the acoustical plaster.

First Coat: Apply the first coat of SABINITE $\frac{3}{8}$ inch thick over a set, cross raked brown coat which is thoroughly green (brown coat must be wet throughout, not merely damp). Follow immediately with a wood or metal darby, levelling SABINITE to provide a true, even surface for the finish coat. First coat of SABINITE must be dry before application of the finish coat.

If brown coat is half green or dry, wet sufficiently to reduce suction (brown coats containing light weight aggregates; vermiculite, perlite, etc., require soaking to reduce excessive suction) and apply a $\frac{1}{4}$ inch bonding coat of gypsum plaster sanded 2:1 by weight. Before bonding coat has set, follow immediately with the first $\frac{3}{8}$ inch coat of SABINITE.

Over properly prepared monolithic concrete surfaces apply BOND-CRETE* plaster not to exceed $\frac{1}{4}$ inch thickness on ceilings and $\frac{3}{8}$ inch on side-walls. Apply the first $\frac{3}{8}$ inch coat of SABINITE over the unset BOND-CRETE or, if set, apply while thoroughly green. Darby lightly to a true level surface immediately after application. Allow to set until dry.

Finish Coat: Apply SABINITE finish coat $\frac{1}{8}$ inch thick, leaving surface free of trowel marks, working from wet edge to avoid joinings. After water sheen leaves surface (about 10-20 minutes after application), *trowel lightly* (do not float) for uniform texture. Do not use water during troweling.

SABINITE FLOAT FINISH

MIXING

Machine Mixing Preferred

Add not over 28 qts. of clean water per bag of SABINITE Float Finish. Add SABINITE to water. Mix 3 to 4 minutes until light and fluffy.

Hand Mixing

Add not over 30 qts. of clean water per bag of SABINITE Float Finish. Hoe until plaster is uniformly wet. Allow to soak for a few minutes, then hoe until mortar is light and fluffy. A 2-bag batch requires about 8 minutes mixing for proper consistency.

APPLICATION

SABINITE Float Finish shall be applied over a level, cross-raked and uniformly dry scratch and brown basecoat of gypsum plaster.

DIRECTIONS FOR PAINTING SABINITE TROWEL FINISH AND FLOAT FINISH

Surface Preparation: Remove all loose dirt or dust by use of hand vacuum or putty type cleaner.

PAINT: Water thinned paint (Regular TEXOLITE, casein base, or Imperial TEXOLITE, resin base), in desired color. First coat mix one part TEXOLITE paste to one part water by volume. Mix second coat if required, one part TEXOLITE paste to two parts water by volume.

SPRAY GUN: Any gun which can be adjusted for a medium fine spray can be used, preferably the Devilbiss spray gun, Type MBD, with a No. 30 nozzle or equivalent.

Apply first coat of SABINITE Float Finish $\frac{1}{4}$ inch thick and bring to a true, even surface with trowel. When water sheen has left surface, broom and allow to set and dry.

Apply finish coat of SABINITE Float Finish $\frac{1}{4}$ inch thick. As water sheen leaves surface, finish with shingle or cork float. Areas must be finished in one operation to avoid joining. *Do not use water in floating.*

DIRECT APPLICATION OF SABINITE TROWEL FINISH TO EXISTING CEILINGS OR CONCRETE

SABINITE Trowel Finish may be applied over existing plaster, and over new or existing concrete ceilings, with the use of asphalt emulsion (Type N-13 HPC or C-13HPC) as a bonding agent.

On existing painted plaster or concrete ceilings the surface must be *dry, clean and sound*. Calcimine or similar powder paints must be washed off and wax, grease or oil removed. Loose or improperly bonded plaster or paint must be removed and such areas repaired with wood fiber or patching plaster. Allow patches to dry 2 to 3 days.

On new concrete ceilings which are smooth, level and dense (not suitable for BOND-CRETE application) the surface must be *dry, free of dust, oil, grease or efflorescence*.

Size any porous concrete or porous or unpainted plaster surfaces with cut-back asphalt, shellac or varnish to reduce suction before asphalt emulsion is applied.

Trowel asphalt emulsion in thin coat not to exceed $\frac{1}{8}$ inch, making certain entire ceiling area is covered.

The first $\frac{3}{8}$ inch coat of SABINITE Trowel Finish should follow application of the emulsion as closely as possible or at least within 2 hours.

Darby first coat of SABINITE to a true even surface with a minimum of pressure. Allow to set until dry.

Apply SABINITE Finish Coat $\frac{1}{4}$ inch thick, scratching in and immediately doubling back, leaving surface free of trowel marks, working from wet edge to avoid joinings. After water sheen leaves surface (about 30 minutes after application), *Trowel lightly* (do not float) for uniform texture. Do not use water during troweling.

NOTE: Only SABINITE Trowel Finish may be applied using this method.

SABINITE 38

MIXING

Machine Mixing Preferred

Add not over 31 qts. of clean water per bag of SABINITE 38. Add SABINITE to water. Mix 3 to 4 minutes until light and fluffy.

Hand Mixing

Add not over 33 qts. of clean water per bag of SABINITE 38. Hoe until plaster is uniformly wet. Allow to soak for a few minutes, then hoe until mortar is light and fluffy. A 2-bag batch requires about 8 minutes mixing for proper consistency.

APPLICATION

SABINITE 38 shall be applied *only* over a level, cross-raked thoroughly cured and uniformly dry scratch and brown coat of portland cement-lime plaster.

Apply first coat of SABINITE 38 $\frac{1}{4}$ inch thick and bring to a true, even surface with trowel. When water sheen has left surface, broom and allow to set and dry.

Apply finish coat of SABINITE 38 $\frac{1}{4}$ inch thick. As water sheen leaves surface, finish with shingle or cork float. Areas must be finished in one operation to avoid joining. *Do not use water in floating.*

DIRECTIONS FOR PAINTING

SABINITE TROWEL FINISH AND FLOAT FINISH

SPRAY PRESSURE: Use 30 to 40 lbs. pressure in the gun and 20 to 30 lbs. on the paint.

SPRAYING: Adjust nozzle for a medium fine spray. Hold nozzle 14 to 18 inches away from the work, using a slow, uniform pass over the surface sufficient to cover in one pass. Do not pass over same area several times since this builds up paint unnecessarily.

DRYING: Allow at least overnight drying between coats, but if weather is extremely humid allow additional drying as necessary.

NOTE: Brush painting is not recommended.

SABINITE 38—Painting directions are available upon request.

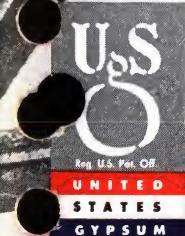
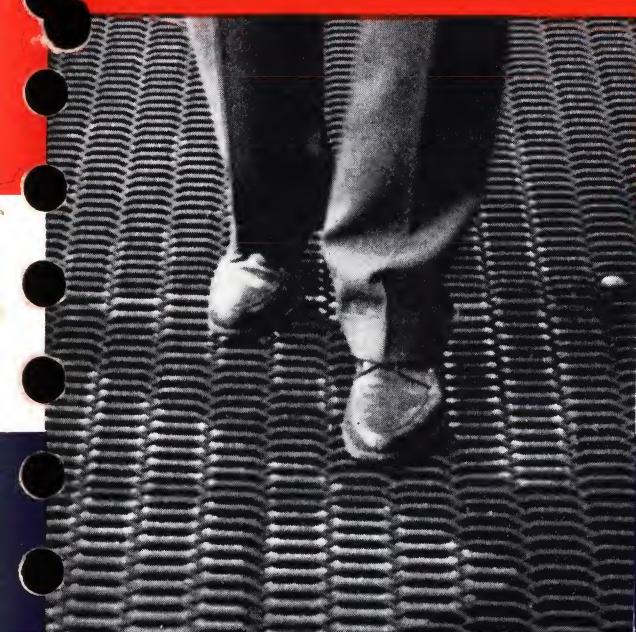


FOR EVERY WALK IN INDUSTRY

GRATE-X

T. M. Reg. U. S. Pat. Off.

USG Expanded Metal Grating



UNITED STATES GYPSUM

GRATE-X USG Expanded Metal Grating

USG GRATE-X is a heavy duty type expanded metal, made of steel plate which is slit and expanded in a cold-drawing operation. Designed especially for use as a lightweight open steel flooring. GRATE-X is ideal for flooring, cat walks, platforms, stair treads, etc., where its principal use is for light storage and foot traffic. Many other practical uses are possible.

economical: A wide selection of sizes and weights is available, and its light weight, combined with high strength, makes for a most economical construction.

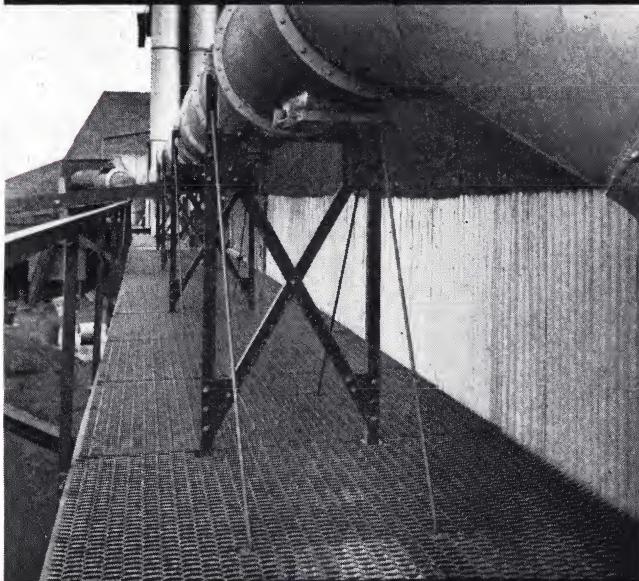
high strength: Formed like a truss, every interconnected strand acts like a structural member distributing the load in many directions.

easily installed: The uniform pattern; ease of cutting with torch, bolt cutters or hacksaw; ease of anchorage with spot welding or bolting and ease of shaping to curved surfaces make for quick, easy installation. Holes may be cut or patched, and alterations made at will.

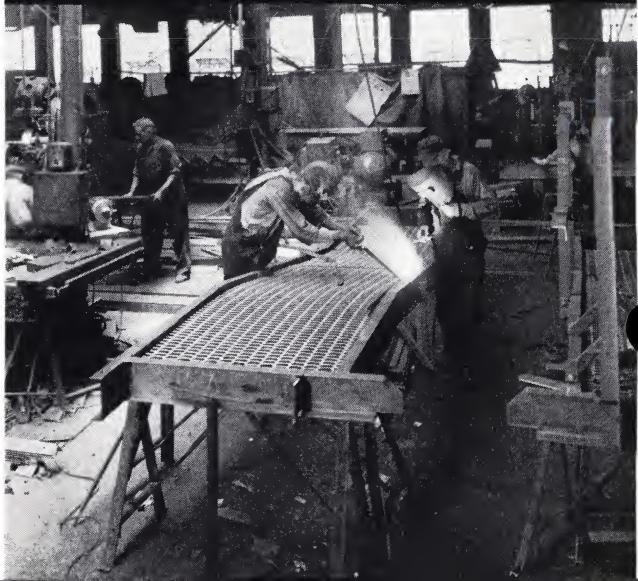
extra safety: The angular ridged surface formed by the multiple junctions of strands provides excellent anti-slip qualities. The closely-spaced long bond feature of GRATE-X provides greater contact area, resulting in a high traction surface, highly skid-proof yet smooth enough for wheel traffic. Water and oil drain off readily.

large open area: The angular position of the strands and bonds permits ready passage of light and air. Dust can not accumulate.

GRATE-X used for industrial walks



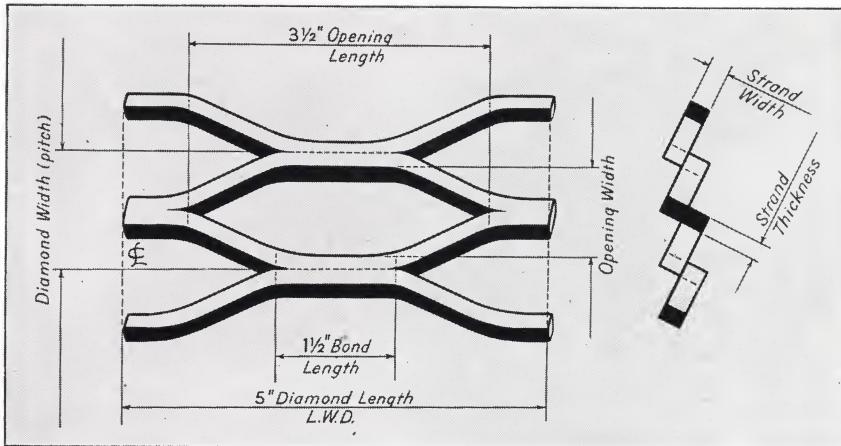
GRATE-X is adaptable to curved supports



GRATE-X

Technical Data

(Typical Detail)



STYLE (psf)	DIAMOND WIDTH (Pitch)	OPENING SIZE	STRAND WIDTH	STRAND THICK- NESS	GRATE-X DEPTH	PERCENT OPEN AREA	SHEET SIZE WIDTH (SWD)	LENGTH (LWD)
3.0 lb.	1.44	1.09 x 3.31	.23	.223	1/2"	61%	72 x	
4.0 lb.	1.395	1.02 x 3.25	.30	.223	5/8"	54%	60 x	
5.0 lb.	1.143	.72 x 2.88	.31	.223	5/8"	48%	48 x	
7.0 lb.	1.333	.70 x 2.75	.40	.284	3/4"	40%	48 x	
20-25-30-40 60-80-120								
20-25-30 40-60-80-100								

All Dimensions Are Approximate

stainless steel GRATE-X

is also available in 3 lb., 4 lb., and 5 lb. per square foot styles, and in the same sheet sizes as tabulated above.

special sheet sizes

In addition to furnishing the standard size sheets listed in the table above, GRATE-X can be furnished sheared to special sizes. (NOTE) It is standard practice to shear

GRATE-X on the first bond over the dimension specified, both in width (SWD) and in length (LWD).

ordering information

When ordering GRATE-X always specify sheet sizes by giving dimensions as follows: SWD (Short Way of Diamond) by LWD (Long Way of Diamond) respectively. Examples: 48" SWD x 120" LWD; 60" SWD x 20" LWD.

GRATE-X allows ready passage of air and light.

GRATE-X ideal for catwalks



GRATE-X load and deflection table

Grate-x Style	Load Condition	Clear Span	LOADS IN POUNDS . . . DEFLECTIONS IN INCHES							
			25 lb.	50 lb.	75 lb.	100 lb.	125 lb.	150 lb.	175 lb.	200 lb.
3 lb.	C	25"	.032	.060	.090	.114	.140			
		30"	.043	.086	.128	.169				
		35"	.075	.147	.223					
	U	25"	.028	.062	.095	.131				
		30"	.067	.136	.204					
		35"	.104	.205						
4 lb.	C	25"	.022	.040	.060	.082	.098	.119	.138	
		30"	.032	.061	.092	.120	.147	.177		
		35"	.046	.088	.133	.174	.213			
		40"	.064	.119	.180	.241				
	U	25"	.020	.042	.064	.087	.114	.137		
		30"	.039	.080	.119	.160	.200			
		35"	.074	.151	.228					
		40"	.112	.220						
5 lb.	C	25"	.018	.037	.052	.070	.086	.102	.120	.134
		30"	.024	.048	.070	.093	.116	.140	.162	.181
		35"	.036	.068	.103	.138	.170	.204		
		40"	.044	.089	.131	.177	.216	.260		
	U	25"	.020	.042	.064	.086	.110	.134	.158	
		30"	.040	.081	.122	.162	.203			
		35"	.066	.131	.195					
		40"	.074	.148	.223					
Grate-x Style			LOAD IN POUNDS . . . DEFLECTIONS IN INCHES							
	Load Condition	Clear Span	50 lb.	100 lb.	150 lb.	200 lb.	250 lb.	300 lb.	350 lb.	400 lb.
7 lb.	C	25"	.011	.035	.062	.079	.099	.113	.128	.143
		35"	.051	.089	.123	.155	.190	.222		
		45"	.072	.132	.195	.255				
		55"	.095	.197	.290	.378				
	U	25"	.018	.039	.061	.086	.114	.141		
		35"	.057	.117	.182	.256				
		45"	.127	.254						
		55"	.254	.530						

Deflection values to the left of the heavy zigzag line are within deflection limitations of Federal Specification RR-G-661a.

C

= Concentrated load, applied over 12" wide section of GRATE-X with knife edge contact at center of span.

U

= Uniformly distributed load in pounds per sq. ft.

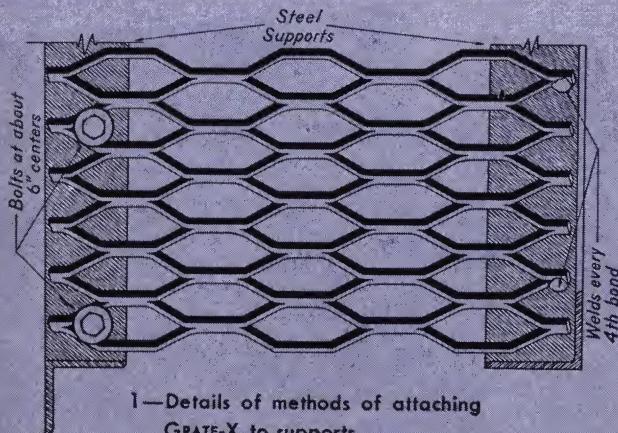
The above table showing deflections for various loads and spans is based on tests conducted by the Armour Research Foundation. Ends of test specimens were fixed according to recommended practice, i. e., welded to structural supports at every fourth bond.

GRATE-X

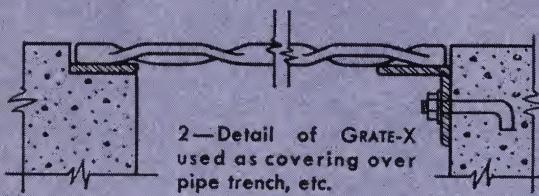
Application details

GRATE-X has a Top and Bottom side and consequently has a right and left hand position. Therefore we recommend the following:

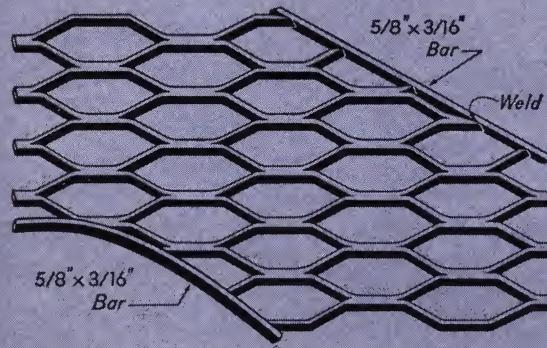
1. Bonds of adjoining sheets should slope in the same direction. (See sketch No. 4.)
2. The side with the "Flat Straight Edged Bonds" is the top side. The bottom side has curved edges at the bonds. The straight edged bonds provide greater surface contact. (See sketch No. 5.)
3. The ends of a GRATE-X sheet should bear on structural supports. (See sketch No. 2.)
4. The sides of adjoining sheets do not require supports when welded together. (See sketch No. 6 and No. 7.)
5. All diagonal or circular cut edges should be banded with a bar welded at contact points. (See sketch No. 3.)
6. GRATE-X should always be anchored to supports. Removable panels may be bolted, and fixed panels may be welded. (See sketch No. 1.)
7. Openings through GRATE-X may be closed by installing a cover piece over the opening. Cover to overlap and mesh with the original sheet. (See sketch No. 8.)



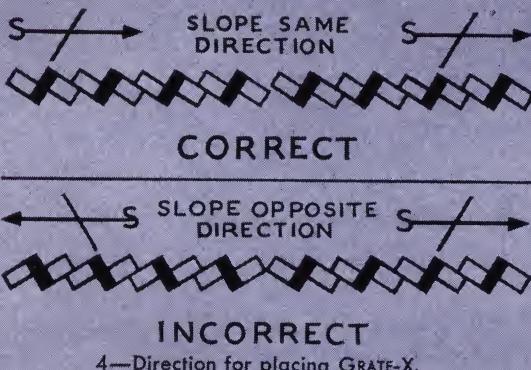
1—Details of methods of attaching GRATE-X to supports.



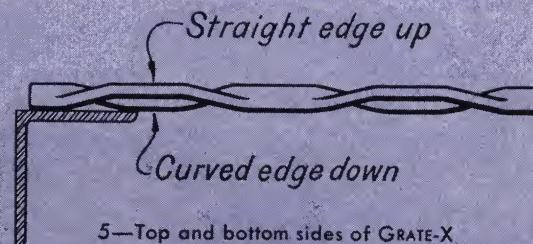
2—Detail of GRATE-X used as covering over pipe trench, etc.



3—GRATE-X banded at diagonal and circular cuts.



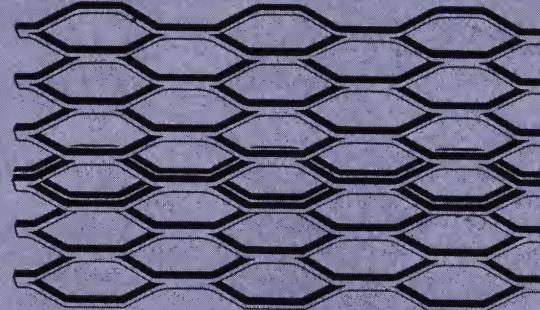
4—Direction for placing GRATE-X.



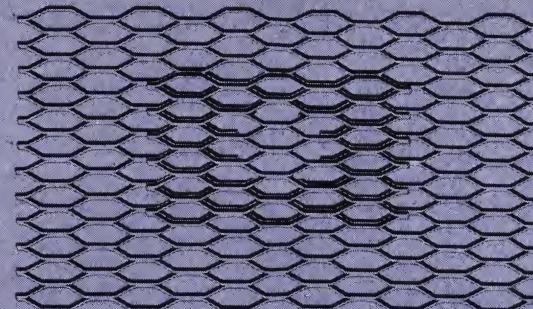
5—Top and bottom sides of GRATE-X



6—Joining GRATE-X sheets by butting and welding.



7—Joining GRATE-X sheets by lapping and welding.



8—Detail showing covering of cutouts in GRATE-X.

flattened GRATE-X

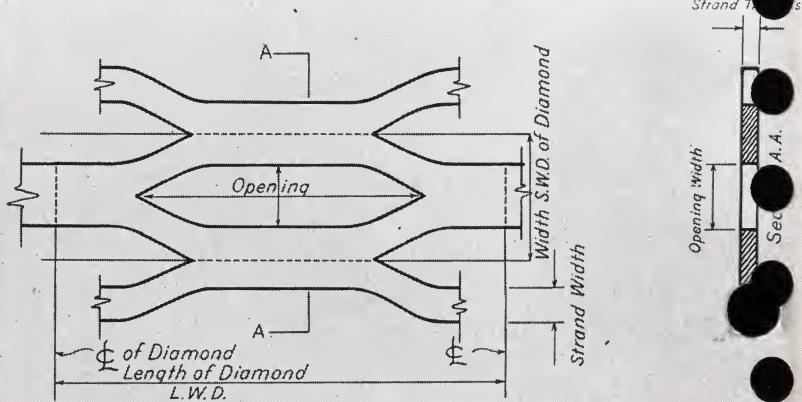
Flattened GRATE-X is regular GRATE-X that has been flattened to a smooth, ridge-free surface by a cold-rolling process. All strands are on the same plane and the diamond openings are considerably smaller. Flattened GRATE-X is ideal for storage bin shelving, fire escapes, stair treads, and walkways where women wearing narrow heeled shoes are likely to walk. The

changes in opening size by flattening, together with the smooth surface, makes Flattened GRATE-X ideal for many uses.

Flattened GRATE-X is customarily "cross rolled"; that is, it has been passed through the rolls with the long dimension of the diamonds parallel to the axis of the rolls. The tables below apply to cross-rolled GRATE-X.

Information on straight-rolled Flattened GRATE-X (long way of diamonds perpendicular to axis of rolls) is available on request.

Typical Detail



Technical Data (Cross Rolled)

STYLE OF FLATTENED GRATE-X	LBS. PER SQ. FT. EXPANDED	DIAMOND SIZE WIDTH	DIAMOND SIZE LENGTH	OPENING SIZE WIDTH	OPENING SIZE LENGTH	STRAND SIZE THICKNESS	STRAND SIZE WIDTH	SHEET SIZE WIDTH SWD	SHEET SIZE LENGTH LWD	PER CENT OF OPEN AREA
3.0 lb.	2.7	1.70	5.00	1.10	3.55	.20	.28	80"	50"	69%
4.0 lb.	3.1	1.50	5.00	1.00	3.40	.20	.32	70"	50"	59%
5.0 lb.	4.4	1.40	5.00	.75	3.00	.20	.34	58"	50"	52%

*All dimensions approximate. Sheet sizes shown are approximately maximum but may vary as much as 5%.

Table of Deflections (Cross Rolled)

STYLE OF FLATTENED GRATE-X	LOAD IN POUNDS	SPAN				LOADING CONDITIONS
		10"	15"	20"	25"	
3.0 lb.	100	.024	.057	.139	.260	Concentrated load in lbs. per foot of width applied at center of span. Long way of diamond runs same direction as span. Tested with fixed ends welded to support 4 diamonds on centers. This table is based on tests conducted in USG Laboratory.
	200	.046	.113	.272	.512	
4.0 lb.	100	.018	.054	.122	.235	
	200	.034	.109	.244	.468	
5.0 lb.	100	.010	.038	.079	.151	
	200	.020	.076	.160	.300	

GRATE-X stair-treads

GRATE-X Stair Treads have all the advantages of GRATE-X; they are light in weight, strong and durable, provide sure footing, and are low in cost. They are ideal for fire escapes and for all types of industrial and ship stairways.

They are easily installed by a simple attachment with bolts and nuts to standard steel channel stringers.

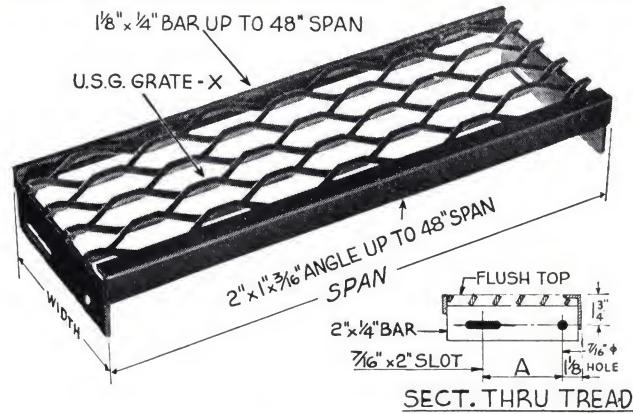
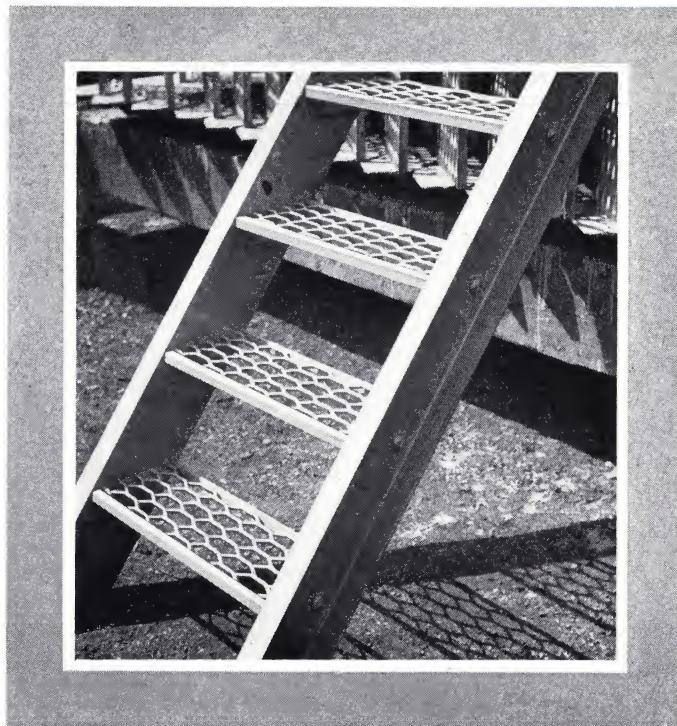
GRATE-X treads are completely prefabricated by USG and are shipped to the customer ready for installation. Bolts for attachment, however, are not furnished with the treads.

GRATE-X Stair Treads are available in two styles, No. 4A, in which 4 lb. GRATE-X is used, and No. 5A, made of 5 lb. GRATE-X. They are available in lengths from 16 in. to 48 in. inclusive, in $\frac{1}{2}$ in. increments. The length of the tread is held to a tolerance of plus or minus $\frac{1}{16}$ in.

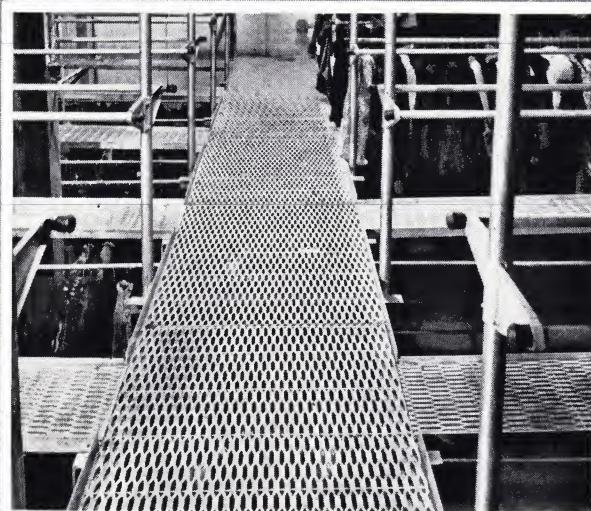
Each style of tread is available in 5 widths, as tabulated below.

WIDTHS AVAILABLE

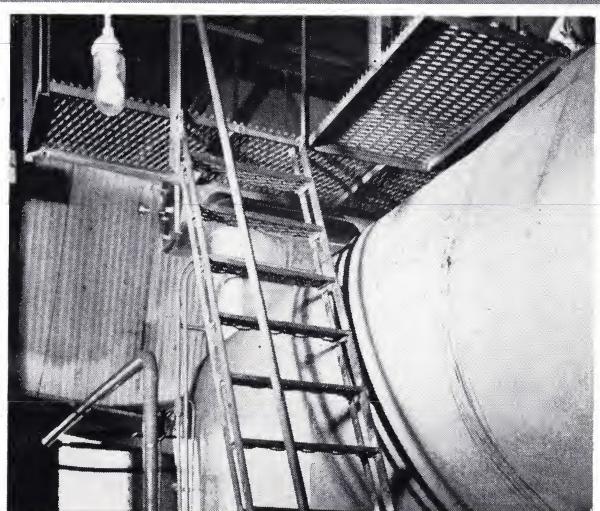
NO. 4A TREAD (4 LB. GRATE-X)	NO. 5A TREAD (5 LB. GRATE-X)	DIMENSION "A" FOR BOTH 4A & 5A
5 $\frac{3}{4}$ "	6 $\frac{1}{4}$ "	2 $\frac{1}{2}$ "
7 $\frac{1}{8}$ "	7 $\frac{3}{8}$ "	2 $\frac{1}{2}$ "
8 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "
9 $\frac{1}{8}$ "	9 $\frac{3}{4}$ "	6"
11 $\frac{1}{4}$ "	10 $\frac{7}{8}$ "	7"

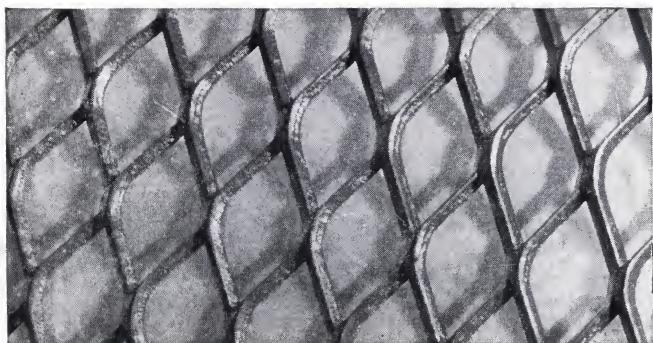


Flattened GRATE-X Walks in Fur Storage Vault

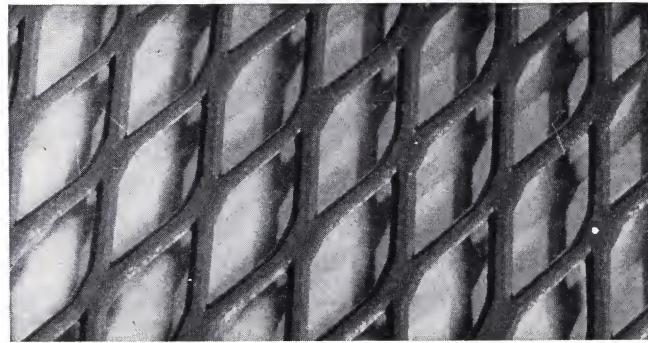


GRATE-X Treads & GRATE-X Catwalk





EXPAND-X



Flattened EXPAND-X

EXPAND-X and

T.M. Reg. U. S. Pat. Off.

FLATTENED EXPAND-X

USG also manufactures a complete line of EXPAND-X and Flattened EXPAND-X in lighter gauge metals.

description

EXPAND-X and Flattened EXPAND-X are open mesh Expanded Metal units made from sheets of steel which have been slit and expanded in a single cold-drawn operation. See data below for sizes.

function and utility

Many uses. Particularly suitable for partitions, ventilator grilles, window guards, shelving, radiator enclosures, bins, racks, etc.

Open mesh. The large percentage of open area permits passage of air and light.

Strong and rigid. There are no rivets or welded joints except where units are joined. Strands of expanded metal are set at a sharp angle, improving strength and rigidity. Various weights are available to meet varying needs.

Smooth surface. The surface of Flattened EXPAND-X permits the use of an expanded metal product for shelving on which objects can more easily stand without tipping and slide without catching.

Workable. These products can be readily cut into desired shapes without danger of raveled strands, and may be welded, bent and formed, drawn and flared.

Neat appearance. Pattern is accurately formed and regularly spaced.

Accessories. Edgings, framings and various other accessories are available.

Metals. Open hearth steel, stainless steel and aluminum are stocked. Copper, brass, etc., can be furnished on order.

Design service. USG Industrial Sales Division, Chicago 6, has Qualified Engineers glad to assist in working out specific problems. Write for further information.

GUIDE TO THE SELECTION OF USG EXPANDED METALS

(All dimensions are approximate)

SUGGESTED APPLICATIONS										Style Number	Weight per sq. ft. (lbs.)	SIZE OF DIAMOND INCHES		EXPAND-X		Flattened EXPAND-X		Made from U. S. gauge No.	
EXPAND-X					Flattened EXPAND-X							Cen. to Cen. of Bonds	Sheet sizes		Sheet sizes				
Machine guards	Window guards	Partitions	Gratings	Shop baskets	Tool cribs	Filters and air conditioning	Trays racks and shelving	Width	Length			Width	Length	Sheet sizes	Width	Length			
				•			•	.26	1.00	1/4" #18	1.17	40	4'	8'	34	4'	8'	18	
							•	.497	1.195	1/2" #40	.40	83	4' & 6'	8'	75	3' & 4'	8'	18	
•							•	.507	1.195	1/2" #18	.70	65	4' & 6'	8'	58	3' & 4'	8'	18	
•				•			•	.507	1.195	1/2" #16	.87	65	4' & 6'	8'	60	3' & 4'	8'	16	
•				•			•	.880	2.00	3/4" #16	.54	76	4' & 6' 6"	8'	74	3' & 4'	8'	16	
•	•			•			•	.880	2.00	3/4" #13	.80	76	4' & 6'	8'	73	3' & 4'	8'	13	
•	•	•	•	•			•	.857	2.00	3/4" #9	1.80	68	4' & 6'	8'	62	3' & 4'	8'	10	
•	•						•	1.35	3.125	1 1/2" #16	.40	85	4'	8'	85	3' & 4'	8'	16	
•	•						•	1.35	3.125	1 1/2" #13	.60	85	4' & 6'	8'	80	3' & 4'	8'	13	
•	•						•	1.33	3.125	1 1/2" #9	1.19	76	4' & 6'	8'	74	3' & 4'	8'	10	

ARCHITECTURAL SPECIFICATIONS

FOR

SHEETROCK PYROFILL

OR

WEATHERWOOD PYROFILL

GYPSUM ROOF DECKS

OVER

BAR JOIST

OR

LIGHT STEEL BEAM

FRAMING



UNITED STATES GYPSUM COMPANY

300 West Adams Street

Chicago 6, Illinois

1949

ARCHITECTURAL SPECIFICATIONS

SHEETROCK PYROFILL & WEATHERWOOD PYROFILL GYPSUM ROOF DECKS

OVER BAR JOIST OR LIGHT BEAMS

Scope

Unless otherwise specified all roof areas shall receive a standard U.S.G. (Sheetrock) (Weatherwood) Pyrofill roof deck complete with cants, curbs, drainage fills etc. as further described herein or indicated on the drawings.

Installation of the roof deck to be made by U.S.G. Roof Deck Contractor.

Work By Others:

All structural steel framing, bar joists, incidental framing at openings, curbs, eaves and ridges, etc. and all wood nailers as indicated complete with anchorage of same will be furnished and installed by other trades.

MATERIALS

1. Sub-purlins

- a. Where bar joist or light beam spacing does not exceed 32" on centers, use not less than 1" x 1" x 1/8" standard hot-rolled steel tees, cut to length to permit ends to bear on joists and be shop painted one prime coat.
- b. Where bar joist or light beam spacing exceeds 32" on centers, use steel sub-purlins, of adequate strength for span (as shown in load tables) in accordance with U.S.G. standards. Sub-purlins to be cut to length to permit ends to bear on bar joist and be shop painted one prime coat. Where standard structural steel tees are used, a satisfactory means of slab anchorage against uplift must be provided. (This uplift force is generally 35 pounds per sq. ft. less the dead load). It should be a metal anchor which is fixed to the main supports or tees and projects into the slab. (See details for suggested methods.)
- c. Where bar joist or light steel beam spacing does not exceed 32" on centers, and no tees or sub-purlins are used, then a satisfactory means of slab attachment to steel and anchorage against uplift must be provided. (This uplift force is generally 35 pounds per sq. ft. less the dead load.) This should be a metal anchor welded to the main purlin, and projecting into the Pyrofill slab. (See details attached for suggested methods.)

2. Formboards

- a. Formboards shall be standard U.S.G. Sheetrock Formboard manufactured expressly for this purpose in size 1/2" thick 32" or 48" wide and in lengths equal to two or more joist spacings.

b. (Alternate) Formboards shall be standard U.S.G. Weatherwood Insulation board manufactured for this purpose in size 1" thick 32" wide by 48" long with a tongue and groove joint on the 32" dimension. (Joist spacing preferably 16", 24" or 32".)

3. Slab Reinforcement

Reinforcing shall be an electrically welded galvanized wire mesh consisting of No. 12 gauge longitudinal wires spaced 4" on centers and No. 14 gauge transverse wires 8" on centers, having an effective cross sectional area of .026 sq. inches per foot of width. (BD 1214 Mat)

4. Gypsum Concrete Fill

The gypsum concrete to be "Pyrofill" manufactured by the United States Gypsum Company. Pyrofill shall consist of not less than 87 1/2% calcined gypsum (stucco) and not more than 12 1/2% wood chips, shavings or fiber by weight proportions. Pyrofill shall be mill mixed and ready for use by the addition of water only.

5. Expansion Joints

Provide expansion joints at intermediate points in the slab where expansion joints are provided in the steel framing all in accordance with details on the drawings. (Architect to detail as job conditions demand.)

Expansion joints at the junction of the roof slab and parapet walls as indicated on the drawings shall be not less than 1/2" fiber insulation board.

ERCTION

1. Sub-purlins

- a. Place and space sub-purlins 2' 8 1/4" to 2' 8 5/8" on centers (depending on size of sub-purlin used). Weld sub-purlins to the bar joists, beam or other principal support at every intersection. Where standard tees are used, install slab anchorage as required to resist uplift. (See attached suggested detail.)
- b. Where no sub-purlins are used, install clips for slab anchorage and uplift resistance as previously described. (See attached suggested detail.)

2. Formboards

- a. Place formboards between sub-purlins, with ends butted over joist supports.
- b. Place formboards over joists with sides or ends butted and/or meshed over supports as indicated on drawings.

Field cut formboards as required to fit at walls, curbs and around openings, etc., all as indicated on the drawings.

3. Slab Reinforcement

- a. Where joist or light beam spacing does not exceed 32" on center the slab reinforcement shall be placed with the No. 12 gauge longitudinal wires running across the joist. (Not across the tee sub-purlins.) Make sure that anchorage against uplight forces is in place and engages the reinforcement.
- b. Where bar joist or light beam spacing exceeds 32" on centers and where sub-purlins are designed to carry the roof loads, the slab reinforcement shall be placed with No. 12 gauge longitudinal wires running across the sub-purlins.

Lap ends of mat not less than 6". Butt sides of mat; do not lap sides. Cut to fit at walls, curbs and around openings as required. Reinforcing to be carried into all areas where pyrofill is poured.

4. Gypsum Concrete Fill

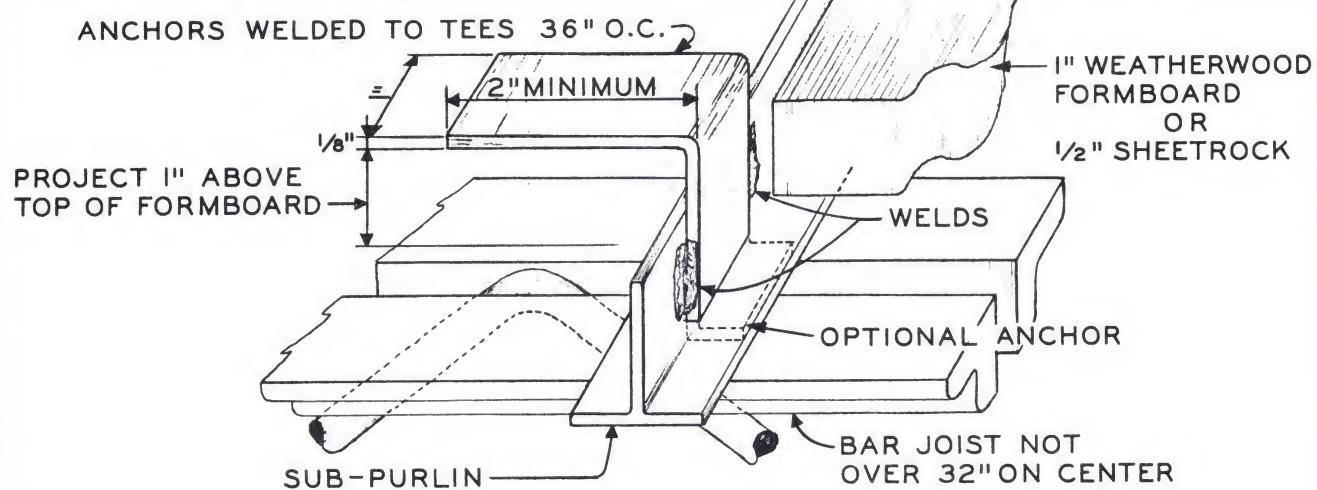
Mix Pyrofill by adding water only in amounts not to exceed that shown in instructions on bags. Pour Pyrofill to a minimum thickness of 2" and screened to a true even plane, ready to receive the roof covering by others. Form curbs, cant strips and drainage fills of Pyrofill as indicated on drawings.

SUGGESTED METHODS OF SLAB ATTACHMENT

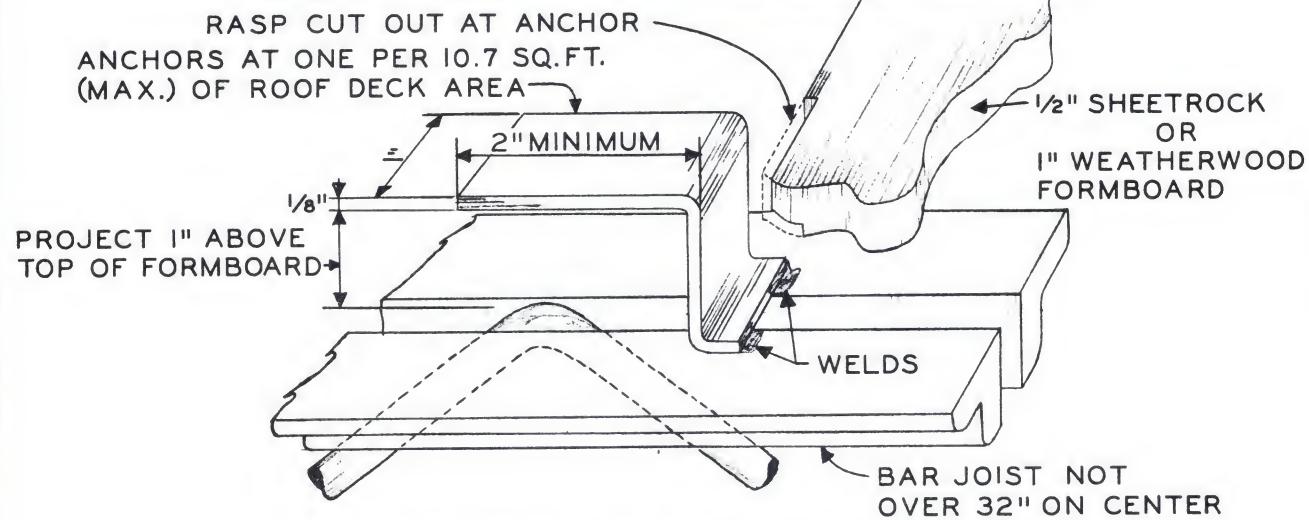
SHEETROCK PYROFILL & WEATHERWOOD PYROFILL OVER BAR TYPE JOIST

DATE: FEBRUARY 7-1949

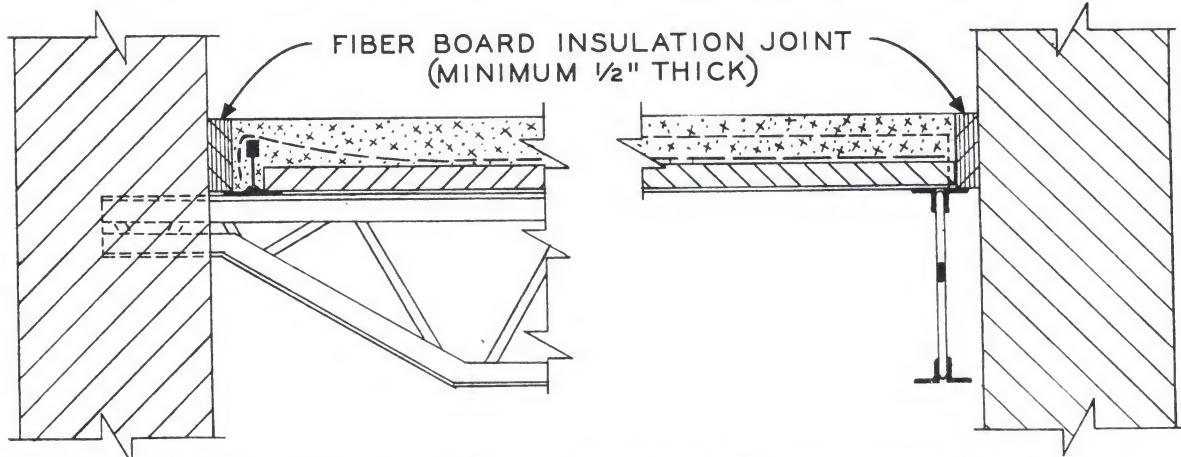
NO. IR-1001



SUGGESTED UPLIFT ANCHORAGE



SUGGESTED SLAB ATTACHMENT



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